

THE DECKER MINE PROPOSALS:
An Economic Analysis

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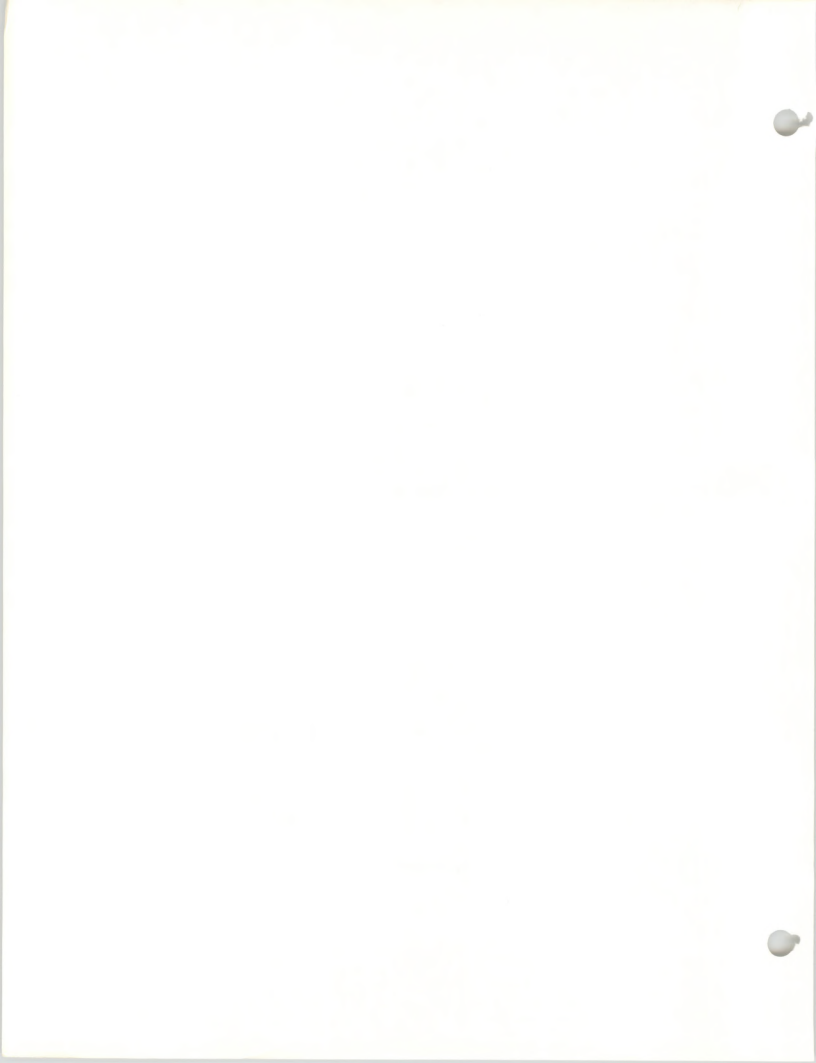
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SUMMARY

CHAPTER II
DESCRIPTION OF THE EXISTING ENVIRONMENT



INVENTORY OF ECONOMIC CONDITIONS

The three counties surrounding the proposed North Extension and East Decker Mines have been defined as the local economic impact area; they are Big Horn and Rosebud Counties in Montana, and Sheridan County in the extreme northern portion of Wyoming. The project sites are located in the eastern "panhandle" of Big Horn County. The southern portion of Rosebud County lies only a few miles to the north, but there are few economic and social links with the project sites. Sheridan County lies to the south of Big Horn County and contains the city of Sheridan, the trade and services center for this region. Both projects are within 30 miles of Sheridan, where most of the economic impacts are projected to occur. Therefore, an extra emphasis will be placed on the existing economic conditions in Sheridan County.

The three-county impact area may be characterized as a sparsely populated region whose economy has been oriented toward agriculture. With the exception of the City of Sheridan, the area has been predominantly a rural, agricultural region with livestock grazing on the extensive grassland ranges as the primary economic base. The City of Sheridan has developed as a trade center serving the surrounding farms and ranches.

The total population of the impact area was 33,941 in 1970. Big Horn and Rosebud Counties reported 10,057 and 6,032 persons, respectively, while the total population of Sheridan County was 17,852--with 10,856 persons in the City of Sheridan. During the sixties, the total population



of the study area declined about 4 percent. Sheridan County and the City of Sheridan declined 6 percent and 7 percent, respectively, over the decade. Big Horn County, on the other hand, experienced a slight gain. Since 1970, estimates of the population in the three counties have shown significant increases. Rosebud County grew about 28 percent from 1970 to 1974, partially as a result of coal-related activity around Colstrip. Estimates for Sheridan County show an increase of about 8 percent over the four-year period, which may also reflect increased coal mining activity in the area.

Indians are the major racial minority in the impact area; during 1970, they represented about 17 percent of the total population. Most Indians live on or near the Crow and Northern Cheyenne Reservations in Big Horn and Rosebud Counties. It is interesting to note that while the total population of the impact area declined during the sixties, the number of Indians increased significantly. Only the City of Sheridan, with less than 50 Indian residents, experienced a decrease in the number of Indians. Big Horn and Rosebud Counties had 18 and 35 percent increases in the number of Indians while the number of whites decreased by 9 and 13 percent, respectively. These increases may be due to higher birth rates and lower migration rates for Indians than non-Indians.

Agriculture has been the economic backbone of the impact area. The farms and ranches may be characterized as large, efficient, and relatively profitable. They have specialized in livestock production, which makes the best use of the vast tracts of rangeland; although crops do provide a significant source of revenue. During 1970, almost 80 percent of the cash receipts from farm marketings were from livestock sales and the remaining 20 percent were from the sales of crops. The average farm or ranch in the impact area was about 5,100 acres during



1969, almost double the statewide average for Montana and approximately 27 percent larger than the corresponding figure for Wyoming. Net incomes per farm or ranch were above the averages for Montana and Wyoming; but, because most land is devoted to grazing, the incomes per acre were below the statewide figures. About 90 percent of the land in the impact area is devoted to agriculture; of this total, approximately 8 percent was in crops and about 2 percent was irrigated.

Farm and ranch workers represented about 18 percent of total employment in the impact area during 1970; this figure was higher in rural Big Horn and Rosebud Counties and somewhat lower in Sheridan County, reflecting Sheridan's role as a trade center. The remaining portion of the basic (or export) sector in 1970 consisted of small manufacturing firms, including a carpet mill and sawmills, several coal strip mines--the Big Horn Mine near Sheridan and the Peabody and Western Energy Mines at Colstrip.

Per capita personal income in the impact area during 1973 was approximately equal to the statewide averages for Montana and Wyoming. During previous years, however, incomes in Big Horn County and, to a lesser extent, Rosebud County were below the average for Montana. The prosperity in agriculture beginning about 1972 was primarily responsible for the rising incomes. There is considerable doubt, however, whether these conditions will continue; the price of beef has been declining and the plight of cattle ranchers has received wide attention.

The unemployment rate averaged about 4.4 percent of the civilian labor force in the impact area during 1970. But, on the two Indian reservations, the figures were between 11 and 12 percent. In addition, there was significant "disguised unemployment"--including persons who would like to work but are not actively seeking employment--which



was most severe among Indians, females, and young people. In general, it appears that the slowly growing economy in the impact area has not provided sufficient employment opportunities for those wishing to work and that there is a surplus labor pool which may be available to fill some of the new positions when they are created.

conflict (possible) is
Labor is statement. This
should be
qualified

The earnings of workers in the impact area, except in a few agricultural occupations, were generally lower than their counterparts elsewhere in Montana and Wyoming. This is characteristic of a slow-growing area with an excess supply of labor.

Labor surplus should
be made more
necessary =>

The elderly comprised a greater-than-proportionate share of Sheridan's population during 1970. This is reflected in the income statistics, which show transfer payments (including Social Security and other retirement benefits) as an important income for residents. Also, the incidence of poverty among unrelated individuals, which may include older persons whose spouse may have died, was significantly greater in Sheridan County.

This is not what they're saying in Rosebud Co.
see Bud still in place

Expenditures by cities, counties, and school districts have increased significantly during the last decade. The burdens on the individual property taxpayers, however, have not grown proportionately. The Montana counties appear to have experienced rapid increases in assessed valuation and moderate declines in property tax mill rates as coal-related projects are added to the tax sales. In Rosebud County, which was the first county to experience significant coal development, property tax mill levies peaked during the early seventies and then declined as the assessed valuation of the coal mines and electrical generating plants were added to the tax base. The total mill levy in Big Horn County decreased sharply during 1975, possibly the result in the addition of the West Decker Mine to the tax base.



Property taxes in Sheridan County have also increased only moderately; but not as a direct result of coal development. In Wyoming, a significant share of the state sales, cigarette, and gasoline taxes are distributed to local governments. These payments, plus the growth in other nontax revenues, have helped to dampen the increased burden on local property taxpayers.



CHAPTER III
ENVIRONMENTAL IMPACT OF THE PROPOSALS



PROJECTED ECONOMIC IMPACTS OF THE PROPOSED DECKER MINES

The economy of the impact area may be conceptually divided into basic and derivative sectors. Basic industries are those which depend heavily on markets outside the area or are otherwise influenced by factors beyond its borders. Examples of basic industries are agriculture, railroads, the federal government, and, of course, mining. Derivative industries, on the other hand, principally serve the local population and include such businesses as wholesale and retail trade, services, and local government.

Economists believe that economic growth in small regions, such as the impact area, can be attributed to events outside the region and that changes in the basic industries will lead to further changes in the derivative industries. That is, basic industries sell their products outside the area or otherwise receive their funds from external sources. A significant portion of these "new" dollars are paid directly to workers in basic industries who, in turn, buy goods and services from local merchants. As these dollars are spent and respent within the local economy, they generate additional wages and salaries and may lead to new jobs in the derivative industries. The income expansion does not go on forever; sooner or later these dollars are spent for items not produced in the impact area and they exit from the local economy.

The proposed Decker mines will create direct employment for miners, railroad employees, and construction workers. As the earnings of these basic workers are spent and respent in the local economy, further



derivative jobs will be created. These positions include additional clerks, auto mechanics, school teachers, and other workers in trade and service industries. The new derivative jobs will occur throughout the local economy and will not be obviously associated with coal development. The increase in employment is projected to be entirely in Big Horn and Sheridan Counties. Even though the proposed mines will be in Montana, a large proportion of the mine-related workers will live in Wyoming and, consequently, most new derivative jobs will be in or near the City of Sheridan.

A summary of the increase in earnings and employment due to the proposed Decker mines is presented in table 11-1. These figures represent the net impact of the proposed Decker mines; they include the projected effects of the decline in agricultural production due to mining activity. The North Extension Mine is projected to employ 125 workers, including 50 site preparation employees, during 1976. In addition, between 140 and 190 new derivative jobs will be created in the local economy. Total earnings of basic and derivative workers will be \$2,718,000 (1970 dollars). Beginning in 1977, operations employment at the mine and railroad employees will number 75 workers and there will be from 100 to 140 derivative jobs. Projections to 2000 show basic employment remaining constant and a slight decline in the number of derivative jobs.

The impact of the East Decker Mine will begin in 1976 with the addition of 165 construction workers and the indirect creation of 100 to 140 new derivative jobs. Production is scheduled to begin in 1978; mine-related employment for this year and 1979 include both construction and operations personnel. In 1980, when the mine is in full production, there will be 297 miners and railroad workers plus 340 to 470 derivative



Table II-1

Projected Increase in Earnings and Employment, Proposed Decker Mines
Big Horn County, Montana, and Sheridan County, Wyoming
1976 to 2000

	1976	1977	1978	1979	1980	1985	2000
<u>North Extension Mine</u>							
Total earnings ^a (thousands 1970 of dollars)	\$2,718	\$1,874	\$1,919	\$1,963	\$ 2,009	\$ 2,261	\$ 3,200
Employment							
Total	265-315	175-215	165-205	165-195	155-195	155-195	145-185
Mine-related jobs ^b	125	75	75	75	75	75	75
Derivative jobs	140-190	100-140	90-130	90-120	80-120	80-120	70-110
<u>East Decker Mine</u>							
Total earnings ^a (thousands 1970 of dollars)	\$2,846	\$3,810	\$6,868	\$7,249	\$ 8,013	\$ 9,007	\$12,726
Employment							
Total	265-305	345-395	605-725	595-725	637-767	627-767	587-737
Mine-related jobs ^b	165	215	285	275	297	297	297
Derivative jobs	100-140	130-180	320-440	320-450	340-470	330-470	290-440
<u>Total, North Extension and East Decker Mines</u>							
Total earnings ^a (thousands 1970 of dollars)	\$5,564	\$5,684	\$8,787	\$9,212	\$10,022	\$11,268	\$15,926
Employment							
Total	530-620	520-610	770-930	760-920	792-962	782-962	732-922
Mine-related jobs ^b	290	290	360	350	372	372	372
Derivative jobs	240-330	230-320	410-570	410-570	420-590	410-590	360-550

^aTotal earnings of mine-related and derivative jobs net of negative impact on agriculture.

^bIncludes mine, construction, and railroad employment.

no discussion of derivative
for "look"

jobs. Basic employment is projected to remain constant to 2000 with a small decrease in the number of derivative jobs.

The North Extension and the East Decker Mines, taken together, are projected to directly and indirectly create 530 to 620 new jobs and \$5,564,000 in additional earnings in 1976. When measured in terms of employment, the maximum impact of these mines is projected for 1980, when there will be between 792 and 962 additional employment opportunities. Total earnings are projected to grow after this date because of the (real) increase in earnings per worker.

The magnitude of the projected impacts may be put in perspective by comparing them to current levels of earnings and employment. During 1972, Big Horn County had total earnings and employment of \$33,700,000 (1970 dollars) and 3,742 workers. The corresponding figures for Sheridan County were \$47,400,000 (1970 dollars) and 7,856 workers, respectively. The projected increases for both mines in 1976 represents about 7 percent of combined earnings and from 4.5 to 5.3 percent of combined employment in the two counties. For just Sheridan County, the corresponding figures are 11.4 percent and 6.7 to 7.9 percent, respectively.

The projections in table 11-1 suggest there will be few disruptions between the construction and operation phases of the proposed mines. There is a slight decline in projected employment, only about 10 jobs, between 1978 and 1979. Given the uncertainties and rough nature of the projections, a decrease of this magnitude may be a statistical artifact. The gradual decline in the number of derivative jobs after 1980 should not be viewed with alarm and need not imply that people will suddenly be thrown out of work. These decreases will occur over many years and may be accommodated through normal attrition.

Most attention will undoubtedly be centered on the new mine-related jobs. They will be stable and well-paying positions; the earnings per worker is projected to average between \$14,000 and \$15,000 (1970 dollars) per year in 1980. But, the new derivative jobs--the clerks, shopkeepers, and service personnel--should not be forgotten. They will outnumber mine-related employment by a significant margin. Their average earnings--\$7,500 to \$10,500 (1970 dollars)--will be far below that of the miners and railroad employees. But, these positions usually require little training and many are part-time, making them attractive to women, young people, persons in search of a second job, or others desiring these types of positions.

The projected changes in government revenues and operating expenditures during 1980 due to the Decker mines are presented in table 11-2. These figures should not be viewed as precise forecasts of the financial situation of the various government units. Instead, they represent only the incremental effects of the proposed Decker mines on government expenditures and revenues. Projected expenditures include only operating expenses, ongoing activities which are financed on a continuing basis. The expenditures for selected new construction projects are discussed later. Several of the taxes are currently under revision or have recently been changed and all the implications of these modifications are not yet known. The projections are based on preliminary interpretations and discussions with appropriate government personnel. Whenever possible, the most conservative assumptions were used. That is, expenditures were projected high and revenues were projected low. Therefore, the figures shown in table 11-2 probably represent the least favorable outcome.



Table 11-2

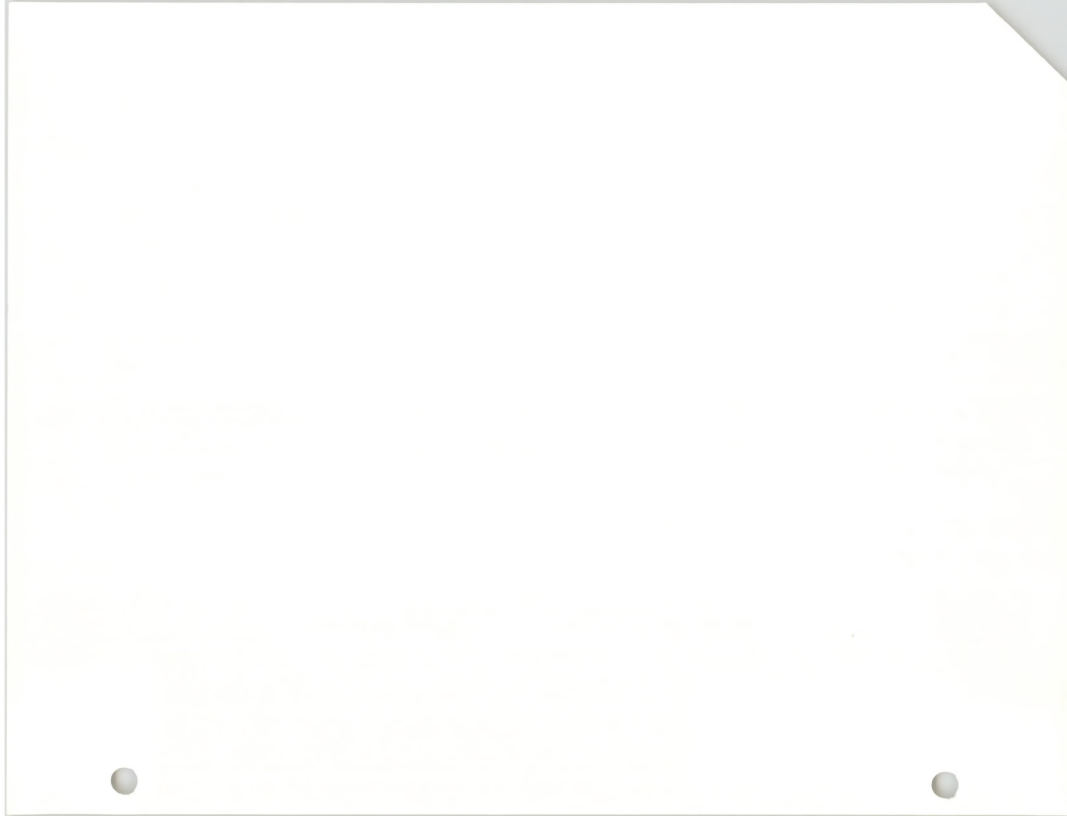
Projected Government Expenditures and Revenues, by Government Unit
North Extension and East Decker Mines
1980

<u>Government Unit</u>	<u>North Extension Mine</u>		<u>East Decker Mine</u>		<u>Total, North Extension and East Decker Mines</u>	
	<u>Expenditures^a</u>	<u>Revenues</u>	<u>Expenditures^a</u>	<u>Revenues</u>	<u>Expenditures^a</u>	<u>Revenues</u>
<u>Montana</u>						
State of Montana	\$11,100	\$2,394,300	\$ 45,900	\$13,262,700	\$ 57,000	\$15,657,000
Big Horn County	2,800	393,200 ^b	11,500	2,062,900 ^b	14,300	2,456,100 ^b
High School District 12 and Elementary District 1	7,700	20,500 ^b	31,500	57,500 ^b	39,200	78,000 ^b
<u>Wyoming</u>						
Sheridan County	\$15,700	\$ 8,300 ^c	\$ 64,800	\$ 33,700 ^c	\$ 80,500	\$ 42,000 ^c
City of Sheridan	34,700	12,200 ^c	143,300	49,200 ^c	178,000	61,400 ^c
School District 2	73,900	51,700 ^c	306,900	213,600 ^c	380,900	265,300 ^c

^a Excludes new construction.

^b Does not include intergovernmental transfers.

^c Includes transfers and tax distributions from the State of Wyoming.



The Montana governments are projected to experience sizable revenue surpluses. The State of Montana will receive almost \$16,000,000 (1970 dollars) during 1980 in combined revenue from the proposed Decker mines. Some of this will return to the local area in the form of Intergovernment transfers and direct spending by the state government. Big Horn County is projected to receive \$2,456,000 (1970 dollars) and the revenues of the two affected school districts will rise by \$78,000 (1970 dollars). Local governments in Wyoming, on the other hand, are projected to suffer deficits because of the Decker mines. The increase in operating expenditures far exceed the growth in revenues. These deficits, however, are projected to be far less than the surpluses in Montana.

In addition to operating expenditures, the Sheridan School District will be required to undertake about \$372,000 (1970 dollars) in new construction. The financing of these projects is likely to be a serious problem because the school district currently has bonded indebtedness of almost 92 percent of its legal bonding capacity. Further, the Sheridan sewage treatment plant may require modifications totaling \$1,800,000 to \$2,000,000 (current dollars). These expenditures are not the direct result of the proposed Decker mines, but they will add to the burden placed on Sheridan residents.



CHAPTER IV

ADDITIONAL MITIGATING OR COMPENSATING MEASURES



MITIGATING OR COMPENSATING MEASURES

The projected economic impacts of the proposed Decker mines cannot, for the most part, be obviously classified as either "costs" or "benefits." That is, the same event may be interpreted as an improvement by some persons while others view it with disfavor. In cases such as these, proposals for mitigating action must be examined very carefully because there is the possibility that the reduction of costs to one group may also reduce the benefits to others and, in the process, more problems are created than solved.

The proposed Decker mines will increase the demand for workers in the Sheridan area. Existing employers may find that they must pay higher wages in order to retain employees or they may be unable to find workers at existing pay scales. On the other hand, the increase in job availability may provide positions for the unemployed (both real and disguised), allow persons with only part-time jobs to move into full-time employment, and provide opportunities for low wage workers to advance into higher paying positions. Most attention will undoubtedly be centered on the new well-paying mining positions. But, the new derivative jobs--the clerks, shopkeepers, and service personnel--should not be forgotten. They will occur quietly throughout the economy and will not be obviously associated with coal development. On the average, they will be lower paying than the mining positions. But they usually require less training and, if historical patterns prevail, many will be filled by females and the young.



The increased population associated with the new mines will place an additional strain on the already tight housing market in the Sheridan area. Rents and property values will rise and adversely effect renters and persons seeking to build new homes. On the other hand, property owners will experience a capital gain; about 60 percent of the dwelling units in Sheridan County--66 percent in the city of Sheridan--are owner-occupied.¹

The proposed Decker mines, with a lifespan of twenty-five years, have been viewed by some as a short-run project which provides only temporary benefits to the area. But, twenty-five years of relatively certain production compares favorably with other forms of industrial development. The same degree of certainty could not be assigned to, for example, a new carpet mill, canning factory, or slaughterhouse. Also, many changes can occur over a quarter of a century; almost no one predicted in 1950 that agricultural jobs would decrease by almost one-half by 1975.¹ Or, very few persons anticipated the current situation in the tourist industry, dependant as it is upon the uncertainties and increasingly expensive sources of fuel. In short, very few industrial developments carry with them assurances of long-term permanence; but, when compared to other projects which are feasible for the area, coal mining has many advantages.

The state of Montana and local governments in the Montana portion of the impact area are projected to have sizable revenue surpluses from the proposed Decker mines. Governments in Wyoming, however, will probably experience deficits. At first glance, the solution simply requires

¹ U.S. Bureau of the Census, Census of Housing: 1970, Vol. 1, Housing Characteristics for States, Cities, and Counties, Part 52, *Wyoming*, Washington, D.C., U.S. Government Printing Office, 1972, tables 1 and 60.



transferring funds from one area to another. But, abstracting from purely political issues, this would involve actions by two state governments plus numerous local governments and require an unprecedented degree of coordination and cooperation. Due to present institutional constraints, therefore, some inequities are almost inevitable and there is little hope of solving them in the near future.

The Decker Coal Company proposes to fence a total of approximately 6,300 acres and remove them from agricultural production for the life of the mines. Only a portion will actually be mined. The displacement of this land will reduce the total output of farms and ranches in the area. The decline in gross farm receipts is (optimistically) projected to be about \$95,000 (1970 dollars) per year. The adverse economic impact of this action will be relatively minor. The 6,300 acres is only slightly larger than the average farm or ranch in the impact area and the projected decline in gross farm receipts represents about 0.4 percent of the reported total in Big Horn County during 1973.²

²Montana Department of Agriculture and U.S. Statistical Reporting Service, *Montana Agricultural Statistics*, Volume XV, Helena, 1974, p. 13.



FULL REPORT



CHAPTER II
DESCRIPTION OF THE EXISTING ENVIRONMENT



INVENTORY OF ECONOMIC CONDITIONS

A. Definition of the Impact Area

The three counties surrounding the proposed North Extension and East Decker Mines have been defined as the local economic impact area; they are Big Horn and Rosebud Counties in Montana, and Sheridan County in the extreme northern portion of Wyoming. The project sites are located in the eastern "panhandle" of Big Horn County. The southern portion of Rosebud County lies only a few miles to the north, but there are few economic and social links with the project sites. Sheridan County lies to the south of Big Horn County and contains the city of Sheridan, the trade and services center for this region. Both projects are within 30 miles of Sheridan and based on the existing employment pattern at the East Decker Mine, most of the projects' employees will choose to live in the vicinity of Sheridan. Therefore, an extra emphasis will be placed on Sheridan County in the following sections.

B. Overview of the impact area and its economic base

The three-county impact area may be characterized as a sparsely populated region whose economy has been oriented toward agriculture. With the exception of the City of Sheridan, the area has been predominately a rural, agricultural region with livestock grazing on the extensive grassland ranges as the primary economic base. The City of Sheridan has developed primarily as a trade center serving the surrounding ranching community.



The impact area covers 12,592 square miles with a population of only 33,941 in 1970, or 2.7 persons per square mile. This figure is lower than the population density for Wyoming, 3.4 persons, or Montana with 4.8 persons per square mile. The population of the area is not evenly distributed among the three counties (table 3.1). Big Horn and Rosebud Counties reported 10,057 and 6,032 persons in 1970, or densities of 2.0 and 1.2 persons per square mile, respectively. Sheridan County reported 17,852 people in 1970, for a population density of 7.1 persons per square mile. Most of Sheridan County's residents are centered in the City of Sheridan which had 10,856 people in 1970, or about 61 percent of the county's population.

In the decade of the sixties, the total population of the study area declined about 4 percent. Sheridan County and the City of Sheridan declined 6 percent and 7 percent, respectively, over the decade. Big Horn County, on the other hand, showed a slight gain. Since 1970, estimates of the population in the three counties have shown significant increases. Rosebud County grew about 28 percent from 1970 to 1974, partially as a result of coal-related activity around Colstrip. Estimates for Sheridan County show an increase of about 8 percent over the four-year period, which may also reflect increased coal mining activity in the area.

Table 3.2 presents the racial distribution of the area's population in 1960 and 1970. It is interesting to note that while the total population in the impact area declined during the sixties, the Indian population increased significantly. Only the City of Sheridan experienced a decrease in the number of Indians. The two counties with large Indian populations, Big Horn and Rosebud Counties, had 18 and 35 percent increases in the number of Indians while the number of whites



Table 3.1

Resident Population, Big Horn and Rosebud Counties, Montana, and
Sheridan County, Wyoming, and Selected Cities
1960, 1970, and 1974

	Resident Population			Percentage Change	
	1960	1970	1974 ^a	1960-1970	1970-1974
Total, impact area	35,183	33,941	37,500	-3.5	10.5
Big Horn County	10,007	10,057	10,500	0.5	4.4
Hardin	2,789	2,733	NA	-2.0	--
Rosebud County	6,187	6,032	7,700	-2.5	27.7
Forsyth	2,032	1,873	NA	-7.8	--
Sheridan County	18,989	17,852	19,300	-6.0	7.8
Sheridan City	11,651	10,856	NA	-6.8	--

Sources: U.S. Bureau of the Census, Census of Population: 1970, *Number of Inhabitants, Montana*, PC(1)-A28 (Washington, D.C.: U.S. Government Printing Office, 1970), table 10, pp. 28-13 and 28-15; and idem, Census of Population: 1970, *Number of Inhabitants, Wyoming*, PC(1)-A52 (Washington, D.C.: U.S. Government Printing Office, 1970), table 10, p. 52-15; and idem, "Estimates of the Population of Montana Counties and Metropolitan Areas: July 1, 1973 and 1974," *Current Population Reports*, Series P-26, no. 109 (Washington, D.C.: U.S. Government Printing Office, 1975), table 1; and idem, "Estimates of the Population of Wyoming Counties: July 1, 1973 and 1974," *Current Population Reports*, Series P-26, no. 100 (Washington, D.C.: U.S. Government Printing Office, 1975), table 1.

^aJuly 1, 1974 provisional estimate.



Table 3.2

Resident Population by Race, Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1960 and 1970

	1960			1970			Percentage Change 1960-1970		
	White	Indian	Other	White	Indian	Other	White	Indian	Other
Impact area	30,293	4,724	166	27,883	5,815	243	-8.0	23.1	46.4
Big Horn County	6,584	3,334	89	6,018	3,917	122	-8.6	17.5	37.1
Rosebud County	4,834	1,344	9	4,203	1,820	9	-13.1	35.4	0.0
Sheridan County	18,875	46	68	17,662	78	112	-6.4	69.6	64.7
Sheridan City	11,584	35	32	10,762	28	66	-7.1	-20.0	106.3

Sources: U.S. Bureau of the Census, Census of Population: 1960, *General Population Characteristics, Montana*, PC(1)-28B (Washington, D.C.: U.S. Government Printing Office, 1961), table 28, pp. 28-64 and 28-67; and idem, Census of Population: 1960, *General Population Characteristics, Wyoming*, PC(1)-52B (Washington, D.C.: U.S. Government Printing Office, 1961), table 21, p. 52-29, table 28, p. 52-42; and idem, Census of Population: 1970, *General Population Characteristics, Montana*, PC(1)-B28 (Washington, D.C.: U.S. Government Printing Office, 1971), table 34, pp. 28-64 and 28-65; and idem, Census of Population: 1970, *General Population Characteristics, Wyoming*, PC(1)-B52 (Washington, D.C.: U.S. Government Printing Office, 1971), table 27, p. 52-42, table 34, p. 52-51.



decreased by 9 and 13 percent, respectively. This increase may be partially attributable to a higher birth rate and a lower outmigration rate for Indians than for non-Indians.

Agriculture

Farms and ranches play a crucial role in the economy of the rural portions of the impact area. From table 3.3, it can be seen that 90 percent of the land in the study area was devoted to farms and ranches in 1969--significantly higher than the statewide averages for Montana and Wyoming. Since the *Census of Agriculture* for 1974 will not be available for at least another year, 1969 represents the latest year for which this type of information is available.

There were 1,427 farms and ranches in the impact area in 1969, with an average size of 5,108 acres, ranging from 7,598 acres in Rosebud County to a low of 3,036 acres in Sheridan County. The average farm or ranch in the impact area was almost twice as large as the statewide average for Montana and 27 percent more than the corresponding figure for Wyoming. Table 3.3 also shows that the value of land and buildings per farm or ranch is higher in the impact area than either Montana or Wyoming, probably due to the larger ranch sizes. Only 8 percent of the land in farms and ranches was devoted to cropland; indicating the area's relative specialization in livestock grazing. About 2 percent of the area's farm and ranch land was irrigated in 1969, ranging from a little over 1 percent in Rosebud County to 4 percent in Sheridan County.

About 80 percent of the cash receipts from farm marketings in the area are from livestock sales, and the remaining 20 percent are from sales of crops. The average net income per farm or ranch in the impact area was \$15,857, or \$2.18 per acre during 1969 (table 3.4).



Table 3.3

Selected Characteristics of Farms and Ranches
In the Impact Area, Montana, and Wyoming
1969

	<u>Big Horn County</u>	<u>Rosebud County</u>	<u>Sheridan County</u>	<u>Impact Area</u>	<u>Montana</u>	<u>Wyoming</u>
Land area in farms and ranches (acres)	2,816,994	2,963,025	1,508,873	7,288,892	62,918,247	35,476,374
Percentage of total land area	87.6	91.9	93.1	90.4	67.5	57.0
Number of farms and ranches	540	390	497	1,427	24,951	8,838
Average size (acres)	5,217	7,598	3,036	5,108	2,522	4,014
Value of land and buildings	\$136,581,000	\$83,685,000	\$91,006,525	\$311,273,952	\$3,748,207,000	\$1,445,269,986
Per farm	\$ 252,928	\$ 214,576	\$ 183,111	\$ 218,132	\$ 150,222	\$ 163,529
Per acre	\$ 48.48	\$ 28.24	\$ 60.31	\$ 42.71	\$ 59.57	\$ 40.73
Cropland (acres)	294,794	148,158	118,491	561,443	16,108,575	2,788,453
Percentage of total land in farms and ranches	10.5	5.0	7.9	7.7	25.6	7.9
Irrigated land (acres)	48,400	34,993	60,801	144,194	1,841,421	1,523,422
Percentage of total land in farms and ranches	1.7	1.2	4.0	2.0	2.9	4.3

Sources: U.S. Bureau of the Census, Census of Agriculture: 1969, *Area Reports, Montana*, vol. 1, pt. 38, sec. 2 (Washington, D.C.: U.S. Government Printing Office, 1972), table 1, pp. 1, 17, and 353; and idem, Census of Agriculture: 1969, *Area Reports, Wyoming*, vol. 1, pt. 40, sec. 2 (Washington, D.C.: U.S. Government Printing Office, 1972), table 1, pp. 1 and 137. Percentages derived.



Table 3.4
Agricultural Receipts and Income in the
Impact Area
1970 and 1972

	<u>1970</u>	<u>1972</u>
Total gross agricultural income	\$61,600,000	\$76,425,000
Average per farm	43,167	NA
Average per acre	8.45	NA
Cash receipts from farm marketings	48,533,000	68,407,000
Livestock	38,651,000	55,531,000
Crops	9,882,000	12,876,000
Government payments	3,324,000	2,516,000
Nonmoney income	9,743,000	5,502,000
Total net agricultural income ^a	22,628,000	27,683,000
Average per farm	15,857	NA
Average per acre	2.18	NA

Sources: U.S. Bureau of Economic Analysis, Regional Economics Information System, unpublished data (Washington, D.C., November 1974). Averages per farm and per acre for 1970 were derived using data on the number of farms and acres in 1969 as reported in U.S. Bureau of the Census, *Census of Agriculture: 1969, Area Reports, Montana*, vol. 1, pt. 38, sec. 2 (Washington, D.C.: U.S. Government Printing Office, 1972), table 1, pp. 1, 17, and 353; and idem, *Census of Agriculture: 1969, Area Reports, Wyoming*, vol. 1, pt. 40, sec. 2 (Washington, D.C.: U.S. Government Printing Office, 1972), table 1, pp. 1 and 137.

NA denotes that the figures are not available; in this case, the averages per farm and acre could not be derived because data on the number of farms and acres are not available for 1972.

^aAdjusted for net change in inventories.



In summary, farms and ranches in the impact area may be characterized as large, efficient, and relatively profitable. They have specialized in livestock production, which makes the best use of the vast tracts of rangeland; although crops do provide a significant source of revenue.

Mining

The major mineral, in terms of economic value to the impact area, is coal. Mining of the area's vast coal resource has only begun in earnest in recent years. All but one of the following, currently producing, surface coal mines began operations after 1967:

<u>Mine Operator</u>	<u>Location</u>	<u>Year Started</u>	<u>Estimated 1975 Production (Tons/Year)</u>
Peabody Coal (Big Sky Mine)	Rosebud County	1968	3,000,000
Western Energy (Rosebud Mine)	Rosebud County	1968	5,230,000
Westmoreland (Sarpy Creek Mine)	Big Horn County	1974	4,000,000
Decker Coal (West Decker Mine)	Big Horn County	1972	8,250,000
Big Horn Coal (Big Horn Mine)	Sheridan County	1940's	1,000,000

Only a small fraction of the study area's coal has been recovered, leaving a substantial resource base for coal-related development in the future.

Strip mining is a capital intensive industry requiring relatively few workers per mine, but the workers are well paid, averaging about \$16,000 per year using 1974 wage scales.

C. Labor Force

In 1970, the U.S. Bureau of the Census reported 12,620 persons in the impact area's civilian labor force (table 3.5). Over 55 percent of this total resided in Sheridan County and 65 percent were males.



Table 3.5

Civilian Labor Force and Unemployment, by Sex
Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1970

	<u>Male</u>	<u>Female</u>	<u>Total</u>
Impact area			
Civilian labor force	8,147	4,473	12,620
Percent unemployed	4.6	4.1	4.4
Big Horn County			
Civilian labor force	2,332	985	3,317
Percent unemployed	4.9	4.0	4.6
Rosebud County			
Civilian labor force	1,505	841	2,346
Percent unemployed	4.6	4.6	4.6
Sheridan County			
Civilian labor force	4,310	2,647	6,957
Percent unemployed	4.4	3.9	4.2

Sources: U.S. Bureau of the Census, Census of Population: 1970, *General Social and Economic Characteristics, Montana*, PC(1)-C28 (Washington, D.C.: U.S. Government Printing Office, 1971), table 121, pp. 28-206 and 28-209; and idem, Census of Population: 1970, *General Social and Economic Characteristics, Wyoming*, PC(1)-C52 (Washington, D.C.: U.S. Government Printing Office, 1971), table 121, p. 52-151.



Unemployment averaged 4.4 percent of the civilian labor force in the study area as of April 1970 and was relatively uniform throughout the area. The countywide data, however, do not reveal the high unemployment rate among Indians. The Bureau of the Census reported that unemployment on the Northern Cheyenne Indian Reservation was 11.1 percent in 1970 and 11.6 percent on the Crow Indian Reservation.¹ Even this dismal picture of employment opportunities on the reservation may be too rosy. The census definition of the unemployed includes those who were without a job but looking for work.² This excludes persons who would like to work but were not actively seeking work at the time of the census--sometimes called "disguised unemployment." The U.S. Bureau of Indian Affairs estimates that many Crow and Northern Cheyenne Indians fall into this category and that, if they had been included, the unemployment rate would have been between 25 and 30 percent of the labor force.³ Disguised unemployment is not limited to Indians. The labor force participation rates for most age-sex groups in the impact area counties were below the corresponding statewide figures.⁴ (The use of

¹ U.S. Bureau of the Census, U.S. Census of Population: 1970, *Subject Reports, American Indians*, Final Report PC(2)-1F (Washington, D.C.: U.S. Government Printing Office, 1973), table 13, pp. 161 and 162.

² U.S. Bureau of the Census, U.S. Census of Population: 1970, *Characteristics of the Population, Montana*, vol. 1, pt. 28 (Washington, D.C.: U.S. Government Printing Office, 1972), Appendix B, p. App-20.

³ U.S. Department of the Interior, Bureau of Indian Affairs, "Indians in the Northern Great Plains: Anticipated Socio-Economic Impacts of Coal Development," prepared for the Socio-Economic Work Group of the Northern Great Plains Resources Program, mimeographed (Billings, Montana, n.d.), table 4, p. 7.

⁴ U.S. Bureau of the Census, Census of Population: 1970, *General Social and Economic Characteristics*, Final Reports PC(1)-C52, Wyoming, and PC(1)-C28, Montana (Washington, D.C.: U.S. Government Printing Office, 1971), tables 46 and 121.



*how about
disguised
unemployment
elsewhere?*

Individual age-sex groups corrects for the potential bias due to the larger proportion of older persons living in the Sheridan area.) Disguised unemployment appears to be greatest for females and young persons.

D. Employment and Earnings

Employment patterns in the study area are substantially different from those in Montana or Wyoming as a whole. Agriculture, retail trade, services, and welfare, religious and nonprofit organizations accounted for 58 percent of the employment in the study area in 1970 as compared to 50 percent in Montana and only 46 percent in Wyoming (table 3.6). The study area had noticeably lower employment in mining (these figures are for 1970, before coal production reached its current levels); construction; transportation, communication, and public utilities, wholesale trade, and finance, insurance and real estate.

A closer look at the county detail in table 3.6, reveals some major differences among the counties. Big Horn and Rosebud Counties had a relatively greater orientation toward agricultural; it accounted for 26 percent of the employment in those counties during 1970, compared to only 12 percent in Sheridan County. Employment in welfare, religious, and nonprofit organizations was 6 percent of the total in Big Horn and Rosebud Counties, reflecting government and private Indian service agency employment on or near the Crow and Northern Cheyenne Indian Reservation; the comparable figures for Sheridan County was 2 percent of total employment.

The distribution of employment in Sheridan County, on the other hand, indicates its importance as a regional trade center. Over 45 percent of the employment in Sheridan County was devoted to retail trade and to providing business, personal, health and professional services.



Table 3.6

Civilian Employed Persons by Major Industry Group
Big Horn and Rosebud Counties, Montana and
Sheridan County, Wyoming
1970

	----- Civilian Employed Persons -----				--- Percentage of Total ---		
	<u>Big Horn County</u>	<u>Rosebud County</u>	<u>Sheridan County</u>	<u>Impact Area</u>	<u>Impact Area</u>	<u>Montana</u>	<u>Wyoming</u>
Agriculture, forestry, and fisheries	885	511	798	2,194	18.2	13.4	10.0
Mining	--	63	182	245	2.0	2.4	9.0
Construction	162	117	430	709	5.9	6.4	6.9
Manufacturing	317	174	300	791	6.6	9.7	6.4
Transportation, communication, and public utilities	132	151	455	738	6.1	8.0	8.9
Wholesale trade	35	6	177	218	1.8	3.8	2.7
Retail trade	509	309	1,395	2,213	18.3	18.6	17.6
Finance, insurance, and real estate	62	53	214	329	2.7	3.9	3.3
Business, personal, health, and professional services	309	208	1,645	2,162	17.9	16.1	16.8
Education and public administration	655	437	929	2,021	16.8	16.2	16.9
Welfare, religious, and nonprofit organizations	97	209	138	444	3.7	1.8	1.4
All employed persons	3,163	2,238	6,663	12,064	100.0	100.0	100.0

Sources: U.S. Bureau of the Census, Census of Population: 1970, *General Social and Economic Characteristics, Montana*, PC(1)-C28 (Washington, D.C.: U.S. Government Printing Office, 1971), table 55, p. 28-129, table 123, pp. 28-216 and 28-219; and idem, U.S. Census of Population: 1970, *General Social and Economic Characteristics, Wyoming*, PC(1)-C52 (Washington, D.C.: U.S. Government Printing Office, 1971), table 55, p. 52-96, and table 123, p. 52-155. Percentages derived.

Notes: The data pertain to persons sixteen years of age and older who are in the civilian labor force.

Percentage detail may not add to total because of rounding.

Table 3.6

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Big Horn and Rosebud Counties, Montana and
Sheridan County, Wyoming
1970

	----- Civilian Employed Persons -----				--- Percentage of Total ---		
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Mining	--	63	182	245	2.0	2.4	9.0
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Manufacturing	317	174	300	791	6.6	9.7	6.4
Transportation, communication, and public utilities	132	151	455	738	6.1	8.0	8.9
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Percentage detail may not add to total because of rounding.





This compares with only 25 percent in Big Horn and Rosebud Counties combined.

The occupation of workers (table 3.7) also reflect the differences in the industrial structure in the study area as compared to the states of Montana and Wyoming. There are significantly greater proportions of farm and service workers and smaller proportions of sales workers and operatives in the impact area than in Montana and Wyoming as a whole.

Table 3.8, presents the available data for earnings by occupation in 1969 for the study area. The median earnings for males shows wide differences among occupations, with laborers and farm workers at the bottom of the scale and professional and managerial workers earning the most. The earnings of females, concentrated in clerical and operative jobs, were substantially lower than for males. Lower female earnings probably reflect not only lower wage scales, but also shorter work weeks and fewer weeks worked during the year. The median earnings for most of the occupations tend to be higher in Sheridan County than in Big Horn or Rosebud Counties, but, with the exception of farmers and farm laborers, lower than the statewide figures for Montana and Wyoming.

E. Income

Total personal income in the impact area grew from \$111,149,000 in 1969 to \$171,088,000 in 1973, an increase of almost 54 percent (table 3.9). The increases in Big Horn and Rosebud Counties were 75 and 85 percent, respectively, with much of this rise due to the prosperous conditions in agriculture during the latter part of this period. Total personal income in Sheridan County by comparison, increased only 36 percent from 1969 to 1973.



Table 3.7

Civilian Employed Persons, by Occupation
Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1970

	----- Civilian Employed Persons -----				-- Percentage of Total --		
	<u>Big Horn County</u>	<u>Rosebud County</u>	<u>Sheridan County</u>	<u>Impact Area</u>	<u>Impact Area</u>	<u>Montana</u>	<u>Wyoming</u>
Professional, technical, and kindred workers	432	234	1,078	1,744	14.5	14.3	15.2
Managers and administrators, except farm managers	302	204	698	1,204	10.0	10.2	11.0
Sales workers	130	57	394	581	4.8	6.4	5.4
Clerical and kindred workers	358	304	1,093	1,755	14.5	14.4	14.7
Craftsmen, foremen, and kindred workers	305	184	691	1,180	9.8	12.7	13.7
Operatives, except transport	184	151	360	695	5.8	7.2	8.5
Transport equipment operatives	81	67	222	370	3.1	3.8	3.8
Laborers, except farm	135	141	276	552	4.6	4.7	4.3
Farmers and farm managers	554	306	360	1,220	10.1	7.7	5.5
Farm laborers and farm foremen	298	191	309	798	6.6	3.9	3.5
Service workers, except private household	375	386	1,020	1,781	14.8	13.5	12.9
Private household workers	9	13	162	184	1.5	1.2	1.4
All employed persons	3,163	2,238	6,663	12,064	100.0	100.0	100.0

Sources: U.S. Bureau of the Census, Census of Population: 1970, *General Social and Economic Characteristics, Montana*, PC(1)-C28 (Washington, D.C.: U.S. Government Printing Office, 1971), table 54, p. 28-127, table 122, pp. 28-111 and 28-214; and idem, Census of Population: 1970, *Social and Economic Characteristics, Wyoming*, PC(1)-C52 (Washington, D.C.: U.S. Government Printing Office, 1971), table 54, p. 52-94, and table 122, p. 52-153. Percentages derived.

Notes: The data pertain to persons sixteen years of age and older who are in the civilian labor force.

Percentage detail may not add to totals because of rounding.

Table 3.7

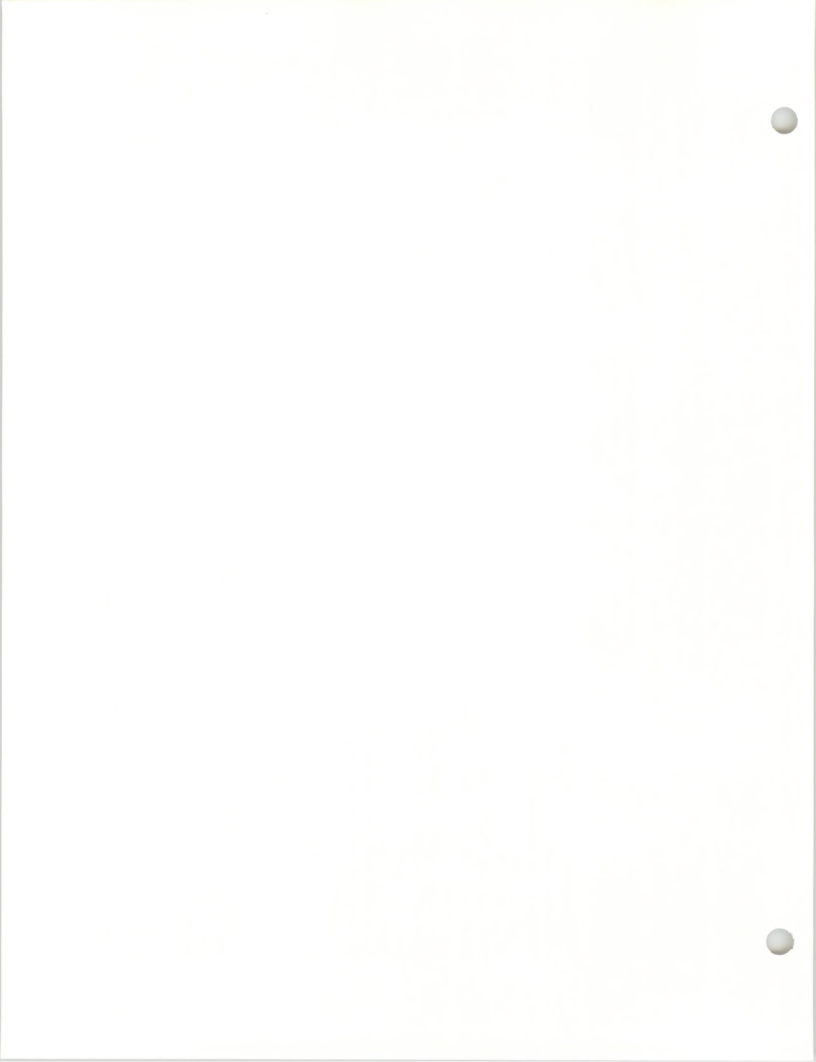
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Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1970

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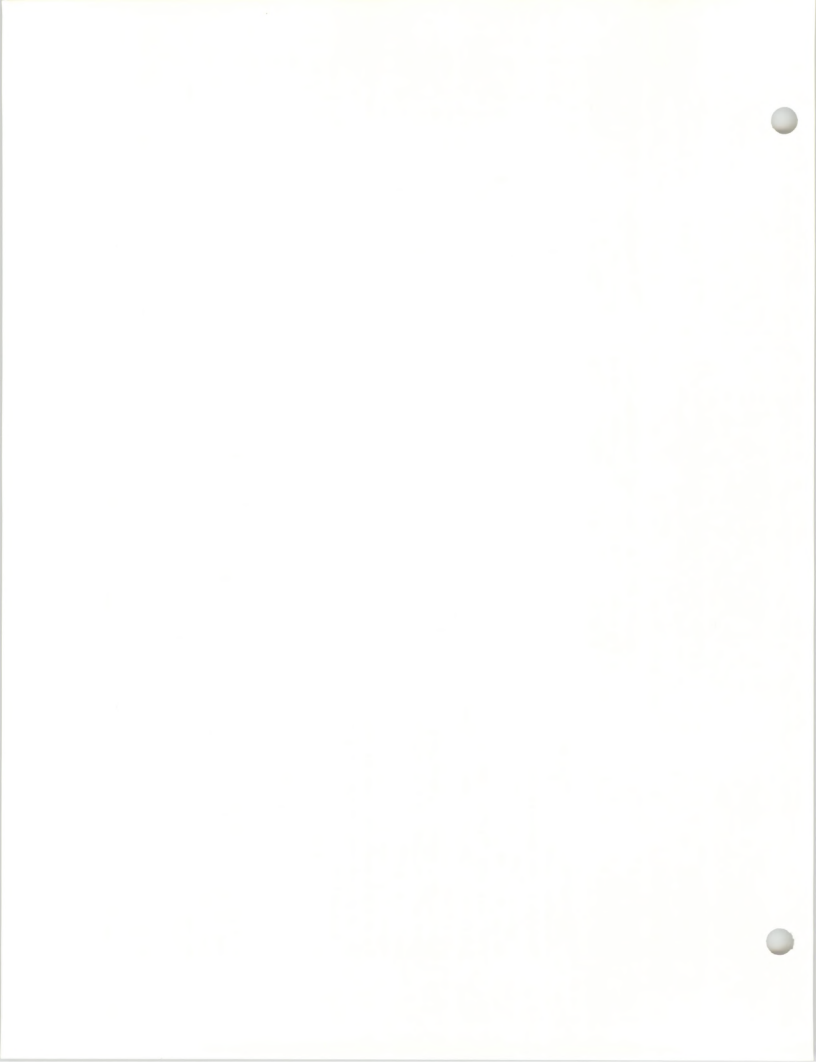


Table 3.8

Median Earnings of Males and Females by Occupational Group
in Big Horn, Rosebud, and Sheridan Counties
Montana and Wyoming
1969

	<u>Big Horn</u>	<u>Rosebud</u>	<u>Sheridan</u>	<u>Montana</u>	<u>Wyoming</u>
<u>Males</u>					
Professional, managerial, and kindred workers	\$7,663	\$7,364	\$9,615	\$9,088	\$9,672
Craftsmen, foremen and kindred workers	6,536	6,129	6,700	7,588	7,942
Operatives, including transport	3,686	6,394	6,500	6,732	7,141
Laborers, except farm	4,188	5,071	4,245	5,092	4,725
Farmers and farm managers	4,571	2,383	6,175	5,627	5,694
Farm laborers, except unpaid, and farm foremen	2,451	3,682	3,674	2,802	3,565
<u>Females</u>					
Clerical and kindred workers	3,207	3,127	3,217	3,382	3,422
Operatives, including transport	2,528	3,000	2,111	2,395	2,094

Sources: U.S. Bureau of the Census, Census of Population: 1970, *General Social and Economic Characteristics, Montana*, PC(1)-C28 (Washington, D.C.: U.S. Government Printing Office, 1971), table 57, p. 28-133, table 122, pp. 28-211 and 28-214; and idem, Census of Population: 1970, *General Social and Economic Characteristics, Wyoming*, PC(1)-C52 (Washington, D.C.: U.S. Government Printing Office, 1971), table 57, p. 52-100, and table 122, p. 52-153.

Note: The data are for persons sixteen years of age and older with earnings who are in the experienced labor force.

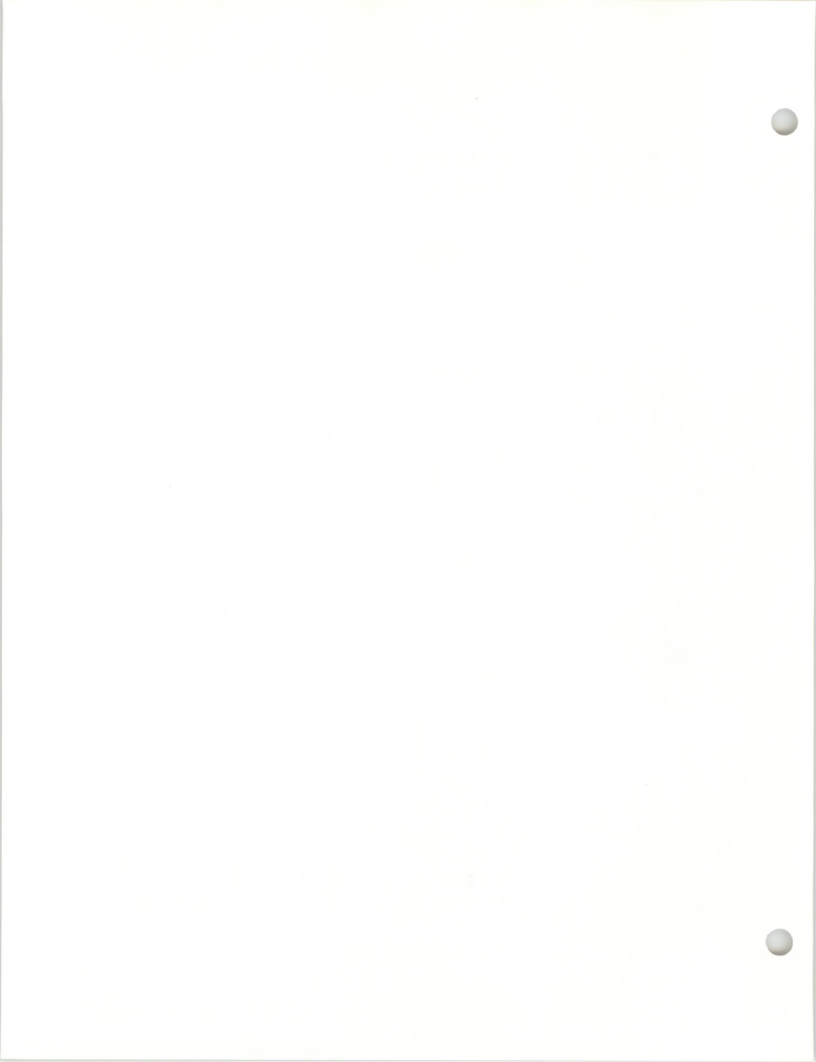
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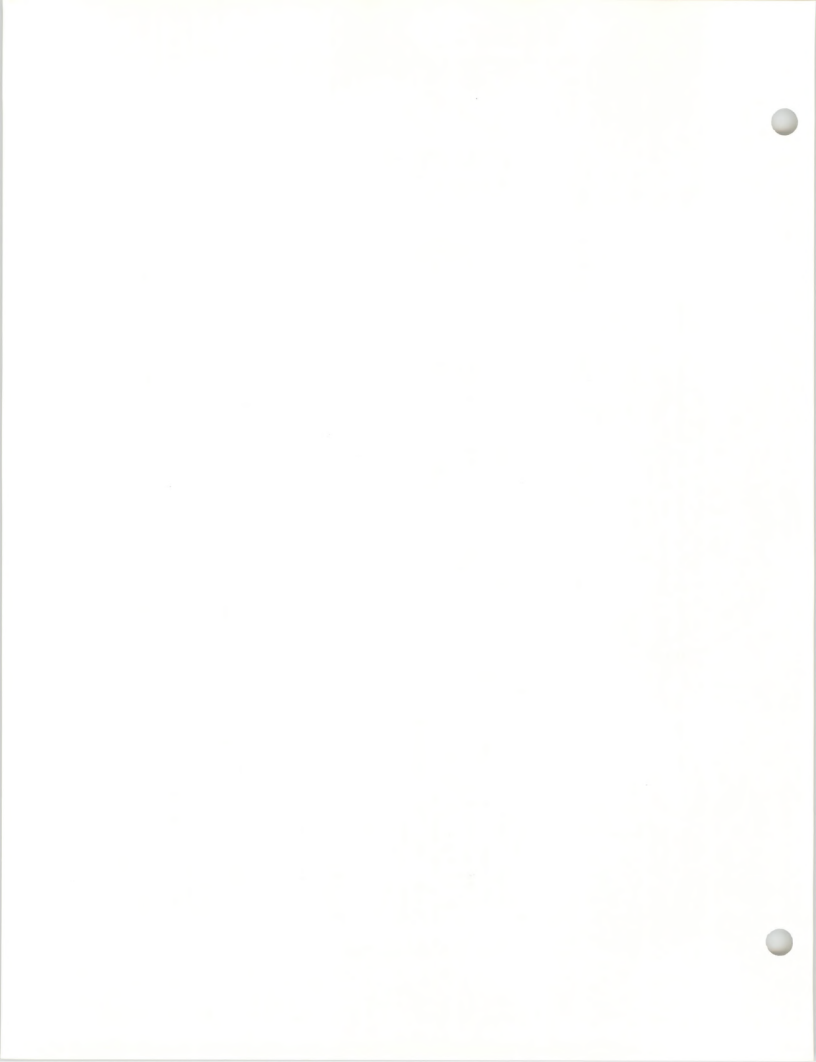


Table 3.9

Total and Per Capita Personal Income by Place of Residence
Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1969-1973

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>Percent Change 1969-1973</u>
<u>Total Personal Income (Thousands of Dollars)</u>						
Total, impact area	\$111,149	\$127,761	\$134,055	\$150,340	\$171,088	53.9
Big Horn County	27,726	31,071	31,400	40,150	48,578	75.2
Rosebud County	17,772	20,845	22,586	26,069	32,875	85.0
Sheridan County	65,651	75,845	80,069	84,121	89,635	36.5
<u>Per Capita Personal Income (Dollars)</u>						
Total, impact area	\$ 3,269	\$ 3,747	\$ 3,920	\$ 4,308	\$ 4,675	43.0
Big Horn County	2,758	3,074	3,106	3,898	4,550	65.0
Rosebud County	2,932	3,438	3,699	4,073	4,724	61.1
Sheridan County	3,697	4,228	4,460	4,622	4,748	28.4
Montana	3,174	3,498	3,575	4,083	4,626	45.7
Wyoming	3,417	3,814	3,865	4,268	4,696	37.4

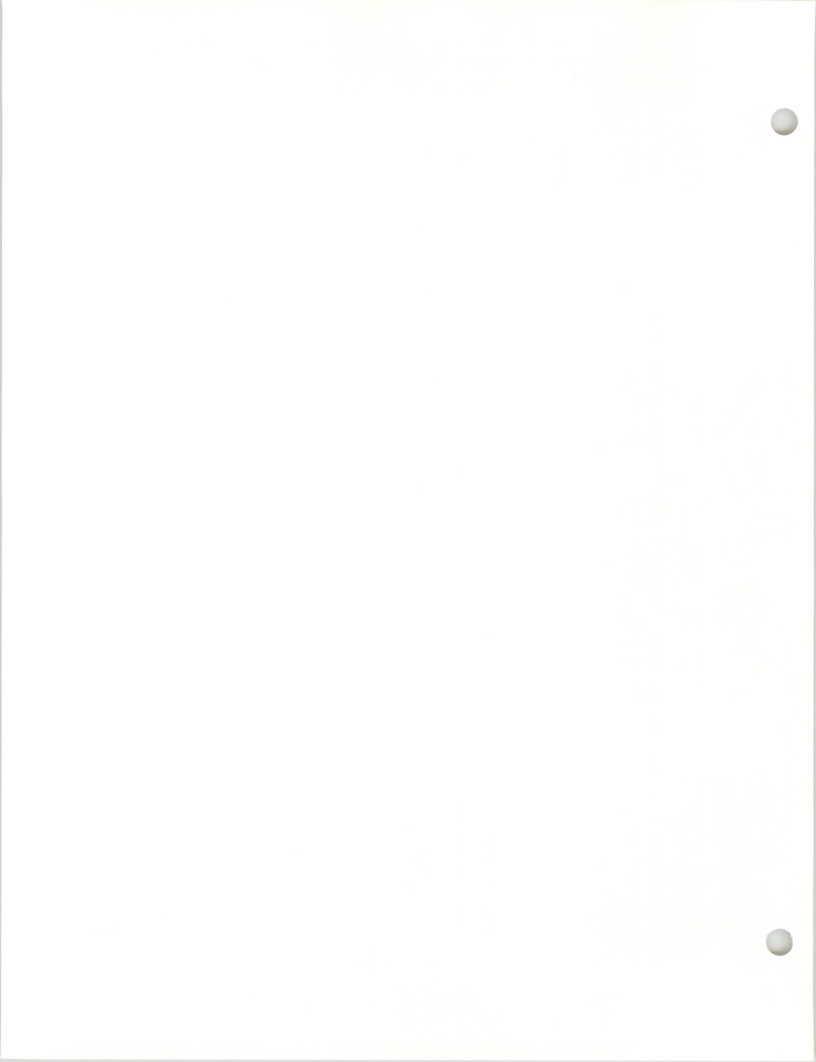
Source: U.S. Bureau of Economic Analysis, Regional Economics Information System, unpublished data (Washington, D.C., August 1975). Percentages derived.

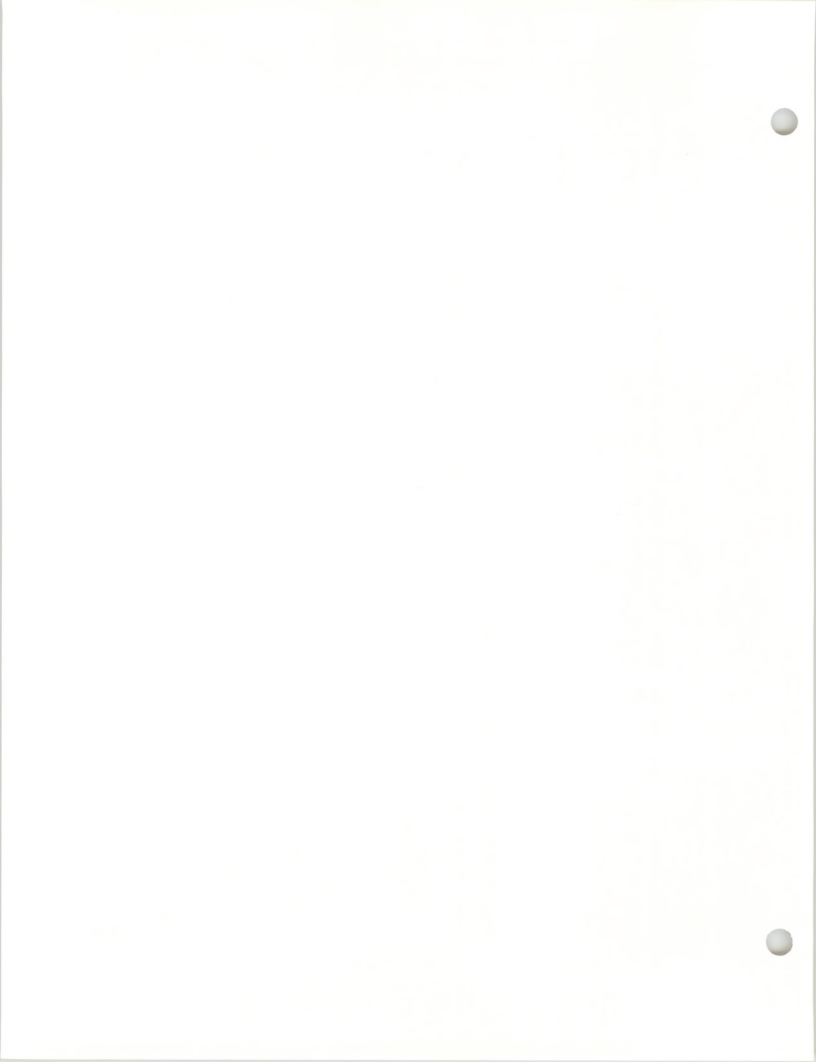
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Source: U.S. Bureau of Economic Analysis, Regional Economics Information System, unpublished data (Washington, D.C., August 1975). Percentages derived.





Per capita personal income is the most widely used indicator of economic well-being. It is not a perfect index because it equates well-being with money income and certainly the residents of this area enjoy considerable benefits which are not easily measured in terms of dollars. Money income, nevertheless, is the one measure which is readily available and easily understood. Average per capita income in the study area during 1973 was \$4,675, approximately equal to the statewide figures for Montana and Wyoming, \$4,626 and \$4,696, respectively. Within the impact area, Big Horn County residents consistently had the lowest average income. Sheridan County, on the other hand, has consistently had the highest level of per capita income; but, its rate of growth between 1969 and 1973 lagged behind the Montana counties because it is relatively less dependent on agriculture.

The importance of the recent prosperity in agriculture to the rapid growth of income in the impact area is shown in table 3.10, which delineates the major components of personal income. Notice that, for the impact area as a whole, farm proprietors' income grew by about 127 percent. It is debatable, however, whether or not this prosperity will continue. The price of beef has been declining and the plight of cattle ranchers has received wide attention. Total nonfarm proprietors' income actually decreased by 7 percent, with only Rosebud County experiencing a slight increase. Wage and salary disbursements, the largest component of personal income, increased by 44 percent from \$53,687,000 in 1969 to \$77,255,000 in 1973.

It is interesting to note the higher proportion of nonparticipation income in Sheridan County than in Big Horn or Rosebud Counties. Nonparticipation income includes dividends, interest, rents and transfer payments, such as Social Security payments, pensions, and government



Table 3.10

Personal Income by Type in the Impact Area
Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1969 and 1973

(Thousands of Dollars)

Type of Income	Big Horn County			Rosebud County			Sheridan County			Impact Area		
	1969	1973	Percent Change	1969	1973	Percent Change	1969	1973	Percent Change	1969	1973	Percent Change
Wage and salary disbursements	\$12,297	\$18,980	54.3	\$8,705	\$16,340	87.7	\$32,685	\$41,935	28.3	\$53,687	\$77,255	43.9
Other labor income	550	1,053	81.5	510	1,251	145.3	1,369	2,028	48.1	2,429	4,332	78.3
Proprietors' income	10,118	22,168	119.1	5,297	11,846	123.6	8,483	8,804	3.8	23,898	42,818	79.2
Farm	8,607	20,678	140.2	4,138	10,624	156.7	2,674	3,638	36.1	15,419	34,940	126.6
Nonfarm	1,511	1,490	-1.4	1,159	1,222	5.4	5,809	5,166	-11.1	8,479	7,878	-7.1
Dividends, interest, and rent	3,154	3,482	10.4	2,517	2,932	16.5	16,290	25,309	55.4	21,961	31,723	44.5
Transfer payments	2,506	4,245	69.4	1,911	2,923	53.0	7,980	13,417	68.1	12,397	20,585	66.0

Source: U.S. Bureau of Economic Analysis, Regional Economics Information System, unpublished data (Washington, D.C., August 1975). Percentages derived.

Table 3.10

Personal Income by Type in the Impact Area
Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
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(Thousands of Dollars)

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Wage and salary disbursements	\$12,297	\$18,980	54.3	\$8,705	\$16,340	87.7	\$32,685	\$41,935	28.3	\$53,687	\$77,255	43.9
Other labor income	550	1,053	81.5	510	1,251	145.3	1,369	2,028	48.1	2,429	4,332	78.3
Proprietors' income	10,118	22,168	119.1	5,297	11,846	123.6	8,483	8,804	3.8	23,898	42,818	79.2
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Source: U.S. Bureau of Economic Analysis, Regional Economics Information System, unpublished data (Washington, D.C., August 1975). Percentages derived.



assistance. In 1973 about 42 percent of the personal income in Sheridan County is attributable to passive income sources as compared to 11 percent in Big Horn County and 12 percent in Rosebud County. The higher dependence on passive income sources in Sheridan County is probably closely related to the significant number of older people in the county, many of whom are living on retirement and investment incomes.

Labor and proprietors' income, often called participation income, are presented by industry source in table 3.11 for 1973. The industry figures emphasize the dependence of Big Horn and Rosebud Counties on agricultural income, which comprised 55 percent and 40 percent of total participation income in those counties, respectively. Sheridan County received most of its participation income in 1973 from wholesale and retail trade, services, and government, which taken together, accounted for 59 percent of the total. For the impact area as a whole, farm, trade, service, and government incomes provided 74 percent of the total labor and proprietors' income in 1973.

Poverty is a problem in the study area. Based on a federal inter-agency committee definition of poverty, which takes into account such factors as family size, sex and age of the family head, number of children, and farm-nonfarm residence, over 18 percent of the residents of the area had incomes below the poverty level in 1969 (table 3.12). That figure, which includes members of families and unrelated persons, compares with statewide averages of 14 percent for Montana and 12 percent for Wyoming. Poverty rates were higher for families in Big Horn and Rosebud Counties, but Sheridan County had a higher percentage of unrelated individuals with incomes below the poverty level. Again, this may reflect the large number of older persons, whose spouse may have died, living in the Sheridan area. The poverty rates for residents of the two



Table 3.11

Labor and Proprietors' Income, by Industry
Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1973

(Thousands of Dollars)

<u>Industry</u>	<u>Big Horn County</u>	<u>Rosebud County</u>	<u>Sheridan County</u>	<u>Impact Area</u>
Farm	\$23,081	\$12,006	\$ 5,341	\$40,428
Nonfarm	19,120	17,431	47,426	83,977
Private	11,712	13,816	32,056	57,584
Manufacturing	822	1,069	3,432	5,323 ^a
Mining	(D)	(D)	1,121	7,501 ^a
Contract construction	1,742	969	5,704	8,415
Wholesale and retail trade	3,019	1,707	9,695	14,421
Finance, insurance, and real estate	639	348	2,423	3,410
Transportation, communication, and public utilities	922	2,287	2,804	6,013 ^a
Services	2,403	(D)	6,242	11,269 ^a
Other industries	(D)	178	635	1,232 ^a
Government	7,408	3,615	15,370	26,393
Federal, civilian	4,127	1,424	6,511	12,062
Federal, military	185	118	521	824
State and local	3,096	2,073	8,338	13,507

* Source: U.S. Bureau of Economic Analysis, Regional Economics Information System, unpublished data (Washington, D.C., August 1975).

(D) Not shown to avoid disclosure of confidential information or for items \$50,000 or less.

^a Estimated.

Table 3.11

Labor and Proprietors' Income, by Industry
Big Horn and Rosebud Counties, Montana
and Sheridan County, Wyoming
1973

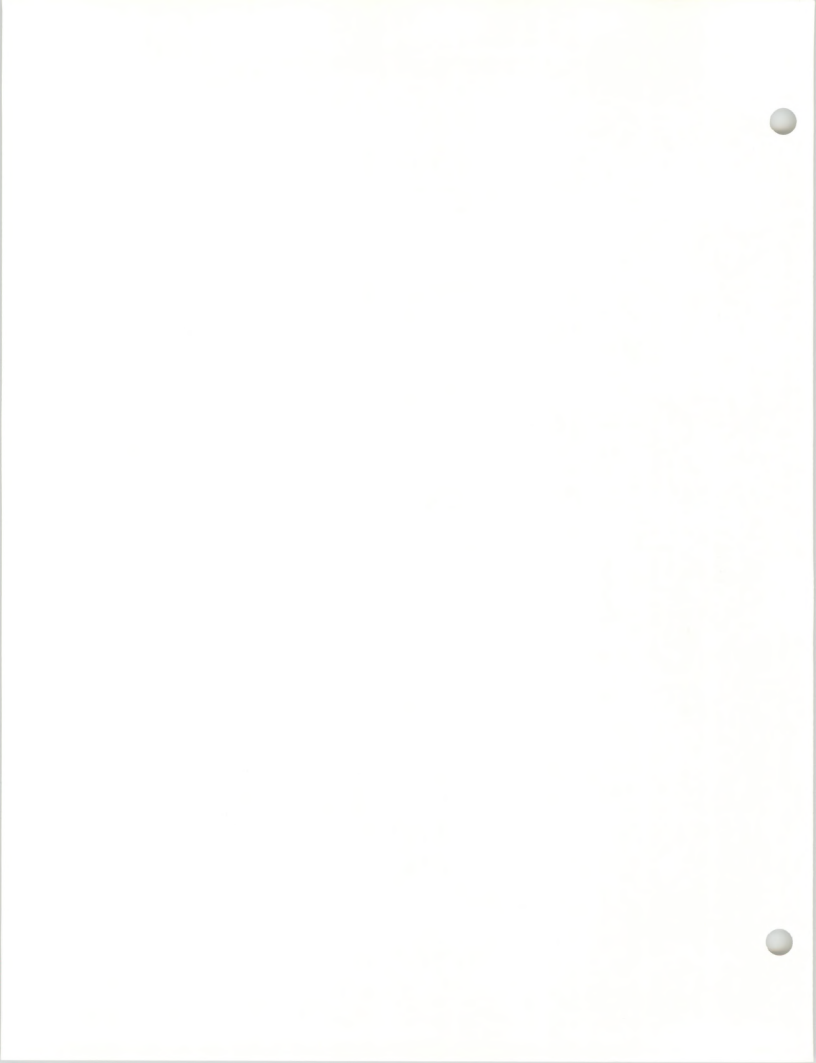
(Thousands of Dollars)

<u>Industry</u>	<u>Big Horn County</u>	<u>Rosebud County</u>	<u>Sheridan County</u>	<u>Impact Area</u>
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^a Estimated.



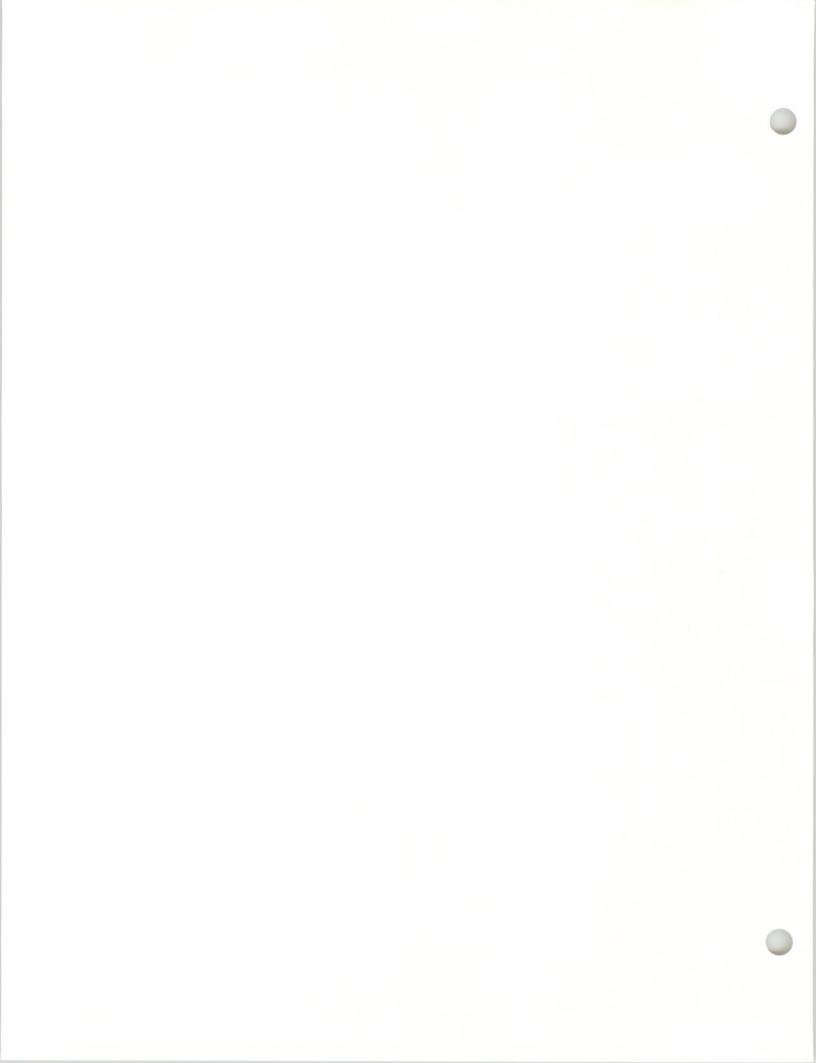


Table 3.12

Poverty Status of Residents, Big Horn and Rosebud Counties, Montana
 Sheridan County, Wyoming, Crow Indian Reservation
 and Northern Cheyenne Indian Reservation
 1969

	Residents Below Poverty Level			Percentage of Total ^a		
	<u>Families</u>	<u>Unrelated Individuals^b</u>	<u>All Persons^c</u>	<u>Families</u>	<u>Unrelated Individuals</u>	<u>All Persons</u>
Impact area	1,218	1,093	6,219	14.3	38.8	18.3
Big Horn County	474	189	2,522	21.4	33.3	25.3
Rosebud County	301	176	1,519	20.0	35.2	25.8
Sheridan County	443	728	2,178	9.3	43.1	12.7
Crow Indian Reservation	184	40	1,348	40.0	85.1	44.7
Northern Cheyenne Indian Reservation	175	29	916	39.8	78.4	40.7

Sources: U.S. Bureau of the Census, Census of Population: 1970, *General Social and Economic Characteristics, Montana*, PC(1)-C28 (Washington, D.C.: U.S. Government Printing Office, 1971), table 124, pp. 28-221 and 28-224; and idem, Census of Population: 1970, *General Social and Economic Characteristics, Wyoming*, PC(1)-C52 (Washington, D.C.: U.S. Government Printing Office, 1971), table 124, 52-157; and idem, Census of Population: 1970, *American Indians* PC(2)-1F (Washington, D.C.: U.S. Government Printing Office, 1973), table 14, pp. 171 and 172. All data for the impact area were derived.

Note: The poverty status is based on a federal interagency committee definition of poverty which takes into account such factors as family size, age, and sex of the family head, number of children, and farm-nonfarm residence.

^aNumber of residents (families, unrelated individuals, or all persons) below poverty level expressed as a percentage of all residents (families, unrelated individuals, or all persons) in the specific area.

^bAll persons in families and all unrelated individuals; i.e., the total population.



Indian reservations were over twice the rates for the impact area as a whole, indicating that Indian poverty is a significant problem.

F. Government Expenditures and Revenues of Big Horn and Rosebud Counties

Expenditures and revenues for the two Montana counties in the impact area are presented in table 3.13 and 3.14. Data for fiscal years 1966 and 1974 are included and, even though particular years may have unusual expenditures or revenues, the general fiscal trend can be discerned from the data.

Expenditures for county purposes have been separated into five major functional categories and a miscellaneous, or non-allocable, category. Expenditures include operating costs of the county government plus capital outlays for buildings and equipment funded either from operating revenues, grants, or revenue sharing funds. In Big Horn County, total expenditures almost tripled during the period, from \$407,000 in 1966 to \$1,199,000 in 1974 (table 3.13). General government expenditures climbed 108 percent from \$131,000 in 1966 to \$272,000 in 1974. Health and welfare increased 270 percent during the period, but a large portion of the expenditure in 1974 (\$177,000) was a capital outlay for hospital buildings and equipment. Although agriculturally related spending increased 212 percent, this category remained at about 2 percent of total county expenditures in both years. The slowest growing expenditure function was law enforcement which increased only 21 percent during the period. This is probably attributable to the fact that much of Big Horn County is covered by the Crow and Northern Cheyenne Indian Reservations which have their own police forces and are not funded by the county. Part of the enormous increase in the non-allocable category, 965 percent, can be explained by noting the \$106,000 of revenue

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Table 3.13

Expenditures and Revenues In Big Horn County
Fiscal Years 1966 and 1975

(Current Dollars)

	Fiscal Year 1966 (000)	Fiscal Year 1974 (000)	Percent Change 1966-1975
Expenditures			
General government ^a	131	272	107.6
Roads and bridges ^b	107	271	153.3
Law enforcement ^c	52	89	71.2
Health and welfare ^d	89	329	269.7
Agricultural related ^e	8	25	212.5
Other, non-allocable ^f	20	213	965.0
Total expenditures for county purposes ^g	407	1,199	194.6
Revenues			
Taxes ^h	328	688	109.8
Other ⁱ	133	505	279.7
Total revenues ^j	461	1,193	158.8

Sources: Big Horn County Clerk's Annual Reports to the State Examiner, fiscal years 1966 and 1974 (Hardin, Montana).

^a Includes expenditures of commissioners, clerk, treasurer, assessor, classification and appraisal, surveyor, buildings, election, county planning, fairs, libraries, school superintendent, and airports.

^b Includes highways, bridges, shop, new roads, tools and machinery.

^c Includes district and justices' courts, attorney, sheriff, coroner, care of delinquent children, prisoners and jail.

^d Includes ambulance, home demonstration agent, senior citizens, burial of soldiers, regional mental health, board of health, special hospital reimbursements to state welfare, county welfare administration, general relief, hospitals and poor fund.

^e Includes predatory animal control, insect and weed control, agricultural agent.

^f Includes refunds, city-county landfill, industrial accident insurance, PERS, and miscellaneous. In 1974, \$106,000 in revenue sharing funds are included.

^g Does not include countywide support of education, except for expenditures of county superintendent's office.

^h Includes all property taxes levied by the county government including the portion used to support schools.

ⁱ Includes refunds, interest, fees and charges, licenses and permits, fines and forfeitures, gifts and grants, revenue sharing, and miscellaneous income.

^j Does not include trust and agency revenues collected for other levels of government.



sharing funds expended by the county in 1974, but not reported by functional category.

The revenue data included for each county are not strictly comparable with the expenditure data for the same years because tax revenues of the counties include the portion collected and paid to school districts through the state equalization program but not recorded as an expenditure of the county.

The revenue data included in tables 3.13 and 3.14 do, however, indicate the trend in countywide tax collections during the period. Tax revenues in Big Horn County more than doubled, from \$328,000 in 1966 to \$688,000 in 1974. Other sources of revenue to the county, such as fines and forfeitures, refunds, interest, grants and revenue sharing funds increased even faster from \$133,000 to \$505,000, or 280 percent. Total county revenues increased 159 percent during the period from \$461,000 to \$1,193,000.

The figures for Rosebud County are presented in table 3.14. Expenditures rose substantially in all of the categories with law enforcement and non-allocable expenditures posting the largest gains. The majority of the increase in law enforcement resulted from a large increase in expenditures for the Sheriff's Office. Total expenditures for the county increased from \$480,000 in 1966 to \$1,109,000 in 1974, an increase of 131 percent.

On the revenue side, taxes collected by Rosebud County increased 142 percent from \$397,000 to \$911,000. However, other sources of revenue increased 615 percent from \$73,000 to \$522,000 largely as a result of revenue sharing and a grant for a hospital received in 1974. Total revenues of Rosebud County increased 216 percent from \$470,000 in 1966 to \$1,483,000 in 1974.



Table 3.14
Expenditures and Revenues In Rosebud County
Fiscal Years 1966 and 1975

(Current Dollars)

	Fiscal Year 1966 (000)	Fiscal Year 1974 (000)	Percent Change 1966-1975
Expenditures			
General government ^a	134	216	61.2
Roads and bridges ^b	147	296	101.4
Law enforcement ^c	48	218	354.2
Health and welfare ^d	63	103	63.5
Agricultural related ^e	39	92	135.9
Other, non-allocable ^f	49	184	275.5
Total expenditures for county purposes ^g	480	1,109	131.0
Revenues			
Taxes ^h	397	961	142.1
Other ⁱ	73	522	615.1
Total revenues ^j	470	1,483	215.5

Sources: Rosebud County Clerk's Annual Reports to the State Examiner, fiscal years 1966 and 1974 (Forsyth, Montana).

^a Includes expenditures of commissioners, clerk and recorder, treasurer, assessor, superintendent of schools plus elections, airport, reclassification (1966) vehicle disposal (1974) cemetery, museum, fair, civil defense, fire control, library, and county planning (1974).

^b Includes county shops.

^c Includes expenditures of district court, sheriff, county attorney, justices of the peace, coroner, juvenile office (1974) public administrator, crime commission (1974) and cost of care for prisoners.

^d Includes expenditures for welfare, general relief, medical and hospital, burial of soldiers and senior citizens (1974).

^e Includes soil conservation, rodent control, weed control, extension, migratory stock, coyote control, pest control, and state brand inspector (1974).

^f Includes cost of county building maintenance, industrial accident, public employees' retirement system, social security.

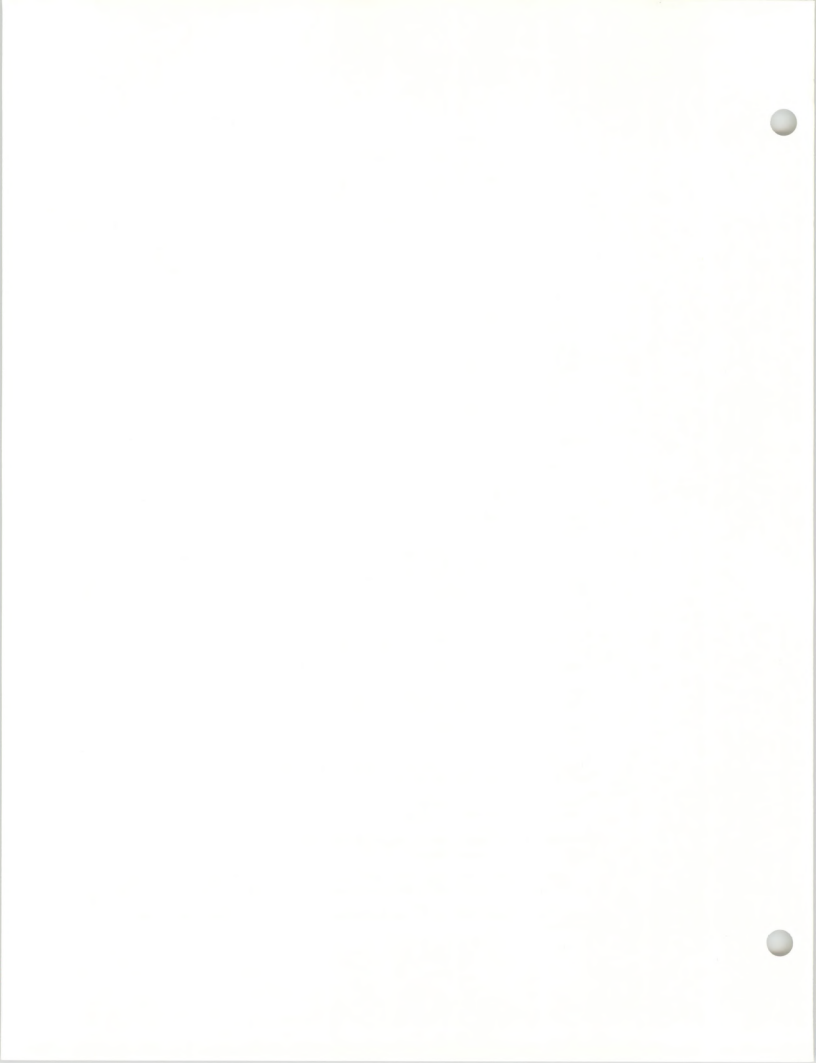
^g Does not include countywide support of education, except for expenditures of county superintendent's office.

^h Includes all property taxes levied by the county government including the portion used to support schools.

ⁱ Includes refunds, interest, fees and charges, licenses and permits, fines and forfeitures, gifts and grants, revenue sharing, and miscellaneous income.

^j Does not include trust and agency revenues collected for other levels of government.

See no somewhat misleading in that the "other" category won't be the large again for some time



Expenditures and revenues for both counties increased dramatically from 1966 to 1975, but a large portion of the growth was due to the general rise in prices of the goods and services the counties purchased. If adjustment is made for the effect of inflation, Big Horn County's expenditures, in real terms, increased 77 percent over the nine years and Rosebud's spending increased only 39 percent.

Similar adjustments to the tax revenue figures show a real increase of 26 percent in tax collections for Big Horn County and 45 percent in Rosebud County over the period. Total revenues increased 55 percent, in real terms, in Big Horn County, and 89 percent in Rosebud County.

The property tax has historically been the major source of revenue for Montana local governments; but, as shown in tables 3.13 and 3.14, nontax sources of revenue have been increasing faster than property taxes. If this trend continues, there will be a decreasing reliance of the counties on the property tax.⁵ A major source of nontax revenue is the federal Revenue Sharing Program, which is funded by the federal government and subject to the usual uncertainties associated with Congressional action.

Property tax revenues depend on the taxable valuation of the jurisdiction and the mill levy rate. Table 3.15 presents the taxable values and mill levy rates for Big Horn and Rosebud Counties for several recent years. While taxable valuations in Big Horn County climbed gradually from 1966 to 1974 the mill levy increased about twice as fast, from 68 mills in 1966 to 96 mills in 1974, indicating that property owners were carrying a heavier property tax burden. The change in taxable value

⁵Preliminary information from Rosebud County for fiscal 1975 indicates that nontax revenues exceeded property tax revenues for the year.



Table 3.15

Taxable Valuation and Mill Levies for County Purposes and Countywide School Levies
Big Horn and Rosebud Counties
Fiscal 1966, 1970, 1974, and 1975

	<u>Property Other than Public Utilities</u>	<u>Local Property of Public Utilities</u>	<u>Public Utilities Allocated by Dept. of Revenue</u>	<u>Net Proceeds</u>	<u>Total Taxable Valuation</u>	<u>Mill Levy for County Purposes and Countywide School Levies</u>
Big Horn County						
1966	\$10,084,641	\$251,079	\$2,195,986	\$22,882	\$12,554,588	67.89
1970	10,704,989	356,399	2,279,738	81,274	13,422,400	76.62
1974	12,776,499	390,053	2,126,674	526,231	15,819,457	95.86
1975	16,671,340	611,873	2,150,563	9,979,047	29,412,823	74.63
Rosebud County						
1966	6,272,512	73,286	2,489,384	2,217,772	11,052,954	75.65
1970	7,337,474	95,741	2,380,931	745,284	10,599,430	95.29
1974	10,244,216	428,493	2,341,949	6,598,335	19,612,993	93.20
1975	13,145,212	3,671,729	2,205,543	6,643,812	25,666,296	82.18

Sources: State of Montana, *Biennial Reports of the Montana State Board of Equilization for the Periods July 1, 1964 to June 30, 1966, and July 1, 1968 to June 30, 1970*; and idem, State of Montana, *Report of the State Department of Revenue for the Period July 1, 1972 to June 30, 1974* (Helena, Montana).



from 1974 to 1975 reflects the addition of coal mining properties to the tax roles and the huge jump in net proceeds (primarily from coal mines) taxes as property. As a result, Big Horn County reduced its mill levy rate from 96 mills in 1974 to 75 mills in 1975.⁶

A similar trend is evident in Rosebud County, except that coal properties and net proceeds began to effect the total taxable valuations in fiscal 1971, causing a corresponding decline in the mill levy from 95 mills in 1970 to 82 mills in 1975. A preliminary estimate of the taxable value for Rosebud County for 1976 is \$43,000,000 which will, no doubt, precipitate another decline in the mill levy rate.

The decreasing county reliance on property tax revenues, and the rapidly increasing taxable valuations resulting primarily from coal development appear to be reducing the property tax burden on tax payers in the two counties, and will probably continue to do so as coal development in the area continues to expand.

G. Expenditures and Revenues of the City of Sheridan and Sheridan County

Trends in local government finances for the Wyoming portion of the impact area are analyzed using budgeted expenditures and expected revenues for the City of Sheridan and Sheridan County during fiscal years 1966 and 1975. These figures should be interpreted with caution because they represent only anticipated expenditures and revenues. Further, the data for only two years may be distorted by isolated events or unusual expenditures. Nevertheless, if these shortcomings are kept in mind, these figures do provide a concise overview of local government conditions.

⁶A complete description of the Montana taxes associated with coal-related development is presented in Appendix B.

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B.H. & Rosebud Co.



Budgeted expenditures and expected revenues for the City of Sheridan are presented in table 3.16. Notice that the municipal Water and Sewer Department is itemized separately for both expenditures and revenues; it is self-financing and does not depend on taxes for operational revenue. The unusually large figure reported for fiscal 1966 was due to the expansion of the sewage treatment plant.

Total budgeted expenditures, excluding the Water and Sewer Department, grew from \$767,000 in fiscal 1966 to \$1,933,000 in fiscal 1975, an increase of about 152 percent. Expenditures from the General Fund, which account for most of the total, rose approximately 145 percent. Among the individual categories, the greatest increase was in Parks and Recreation, almost 942 percent; this does not appear to be an aberration, these expenditures increased sharply in 1972 and have remained at a high level. General government, the Police Department, and the Fire Department expenditures rose between 95 and 138 percent. Street and alley expenditures declined by about 32 percent, but there appears to be approximately \$150,000 in unusual expenditures--possibly construction--during fiscal 1966. Finally, the 1975 budgeted expenditures includes \$302,000 in federal revenue sharing projects.

On the revenue side, the largest increase was in transfers from the state of Wyoming--the city's share of gas, sales, use, and cigarette taxes--which grew from \$119,000 in fiscal 1966 to \$465,000 in fiscal 1975, almost 291 percent. Other nontax revenue, which includes various fees and licenses plus federal revenue sharing in 1975, rose 213 percent. Finally, property tax payments were \$167,000 in fiscal 1966; by fiscal 1975, they had risen to \$218,000, or about 31 percent.

The figures for Sheridan County are shown in table 3.17. Total county expenditures, excluding the County Hospital Fund, grew from



Table 3.16

Budgeted Expenditures and Estimated Revenues
City of Sheridan, Wyoming
Fiscal Years 1966 and 1975

(Current Dollars)

	Fiscal Year 1966 (000's)	Fiscal Year 1975 (000's)	Percent Change 1966-1975
Budgeted expenditures			
General fund, total	\$ 710	\$1,742	145.4
General government ^a	68	162	138.2
Police department	101	230	127.7
Fire department	87	170	95.4
Streets and alleys	301	205	-31.9
Public health and sanitation	66	158	139.4
Parks and recreation	21	219	942.9
Federal revenue sharing	--	302	--
All other	66	296	348.5
Bond sinking and interest funds	57	167	193.0
Cash and reserve funds	0	24	--
Subtotal	\$ 767	\$1,933	152.0
Water and sewer	2,233	653	-70.8
Total, budgeted expenditures	\$3,000	\$2,586	-13.8
Estimated revenues			
Transfers from state ^b	\$ 119	\$ 465	290.8
Other nontax revenue ^c	247	773	212.9
Property taxes ^d	167	218	30.5
Cash available	234	477	103.8
Subtotal	\$ 767	\$1,933	152.0
Water and sewer revenue	2,233	653	-70.8
Total, estimated revenue ^d	\$3,000	\$2,586	-13.8

Source: Budgets for the City of Sheridan.

^aIncludes general government, city attorney, city clerk and treasurer, cemetery, municipal court, engineering department.^bFrom gas, sales, cigarette, and use (beginning in 1974) taxes.^cIncludes federal revenue sharing during 1975.^dExcludes Policemen Pension Fund.

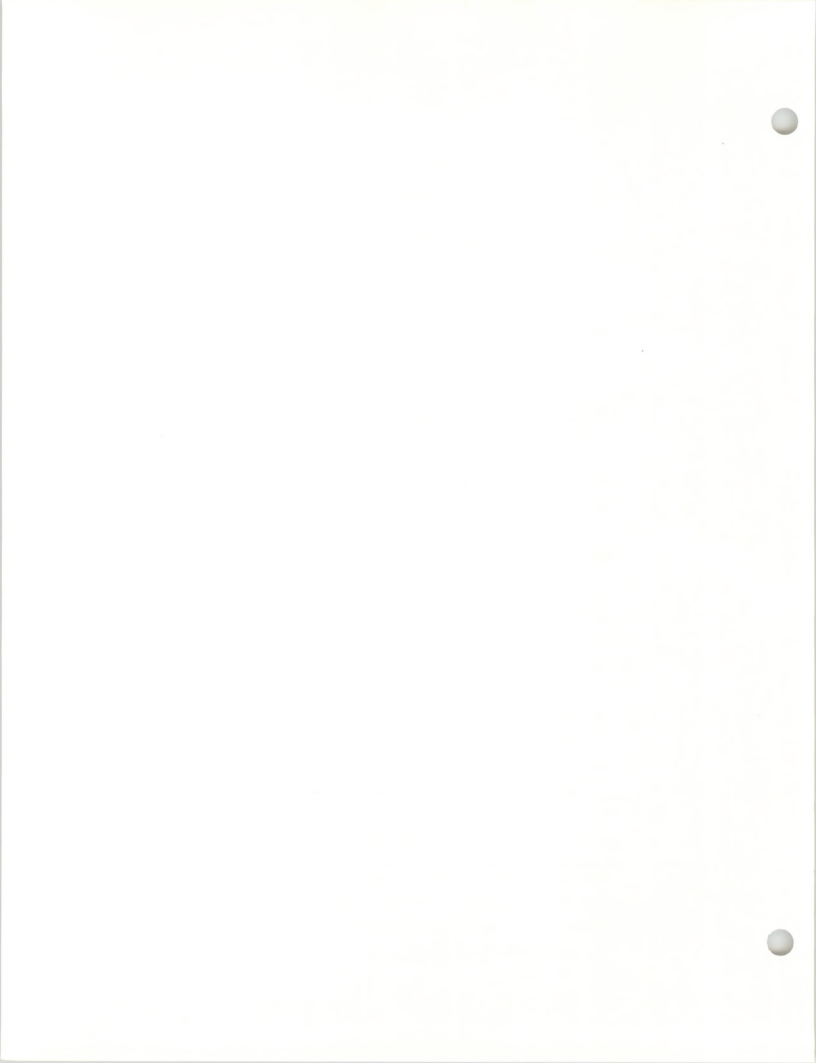


Table 3.17

Budgeted Expenditures and Estimated Revenues
 Sheridan County, Wyoming
 Fiscal Years 1966 and 1975
 (Current Dollars)

	Fiscal Year <u>1966</u> (000's)	Fiscal Year <u>1975</u> (000's)	Percent Change <u>1966-1975</u>
Budgeted expenditures			
General Fund	\$ 363	\$1,210	233.3
General government ^a	128	286	123.4
Law enforcement and courts ^b	84	176	109.5
Roads and bridges	95	208	118.9
Federal revenue sharing	--	281	--
All other	56	259	362.5
Bond Sinking and Interest Funds	35	41	17.1
General Welfare and Health Funds	93	68	-26.9
County Library Fund	27	108	300.0
County Fair Fund	17	27	58.8
General School Fund	--	92	--
Cash, depreciation, and Reserve Fund	--	81	--
Subtotal	\$ 535	\$1,627	204.1
County Hospital Fund	781	2,078	166.1
Total, all funds	\$1,316	\$3,705	181.5
Estimated revenue			
Transfers from state ^c	69	260	276.8
Cash available	18 ^e	188	944.4
Other nontax revenue ^d (excluding hospital)	116	669	476.7
Property taxes (excluding hospital)	332	510	53.6
Subtotal	\$ 535	\$1,627	204.1
County Hospital, total	781	2,078	166.1
Estimated revenue	733	2,025	176.3
Property tax	48	53	10.4
Total, estimated revenue	\$1,316	\$3,705	181.5

Source: Budgets for Sheridan County

^aIncludes county commissioners, clerk, treasurer, assessor, surveyor, coroner, water commissioner, health officer, and elections.

^bIncludes sheriff, clerk of court, justice court, courthouse, jail, and county attorney.

^cGas, sales, cigarettes, and use (beginning in 1974) taxes.

^dIncludes federal revenue sharing in 1975.

^eIncludes estimated cash on hand to reconcile Bond Sinking and Interest Funds.



\$535,000 in fiscal 1966 to \$1,627,000 in fiscal 1975, about 204 percent. The County Hospital is itemized separately because only a small portion of its revenue is derived from local taxes. Total General Fund expenditures rose 233 percent. Among the individual categories, general government, law enforcement, and roads and bridges grew between 110 percent and 123 percent.

Local property tax payments to Sheridan County, excluding the County Hospital Fund, increased about 54 percent, from \$332,000 to \$510,000, between fiscal 1966 and fiscal 1975. Transfers from the state of Wyoming and other nontax revenue grew by 277 and 477 percent, respectively.

The total expenditures of both the City of Sheridan and Sheridan County increased significantly between fiscal 1966 and fiscal 1975. Property tax payments grew, however, at a much slower rate. In fact, if allowances are made for the overall rise in prices during this period (real) property tax payments remained approximately constant or even declined slightly. To some extent, the expansion in local government expenditures was financed through the collection of fees, licenses, and other nontax revenue, and the federal revenue sharing program, which began in fiscal 1973. But, the transfers of funds from the state of Wyoming to city and county governments was a major reason for relatively slow growth in local property taxes. These payments consist of portions of the state sales and use taxes, the cigarette tax, and the gasoline tax which are apportioned out to the cities and counties in Wyoming. The current features of these programs are as follows:

Sales tax: The state of Wyoming has a three percent broadly based sales tax. Prior to 1975, one-sixth of the total sales tax collected



In each county minus expenses for administration were distributed back to the county.⁷ Incorporated municipalities within the county receive a share of these funds equal to its proportion of the total county population as reported in the last federal census. The portion allocated to the county government is based on the percentage of the remaining population that is not included within the corporate limits of its cities and towns. These funds are allocated to the General Fund of the cities and counties. The 1975 Wyoming legislature raised the proportion distributed to cities and counties to one-third.⁸ During fiscal 1974, the City of Sheridan and Sheridan County received \$203,131 and \$116,981, respectively, in sales tax distributions. Counties in Wyoming may also impose an optional one percent sales tax if approved by the majority of its electors, which accrues entirely to the county government.⁹ Sheridan County has not approved this option.

Use tax: The use tax is three percent. It compliments the sales tax and is imposed on property brought into Wyoming from another state, and therefore not subject to Wyoming sales tax. Beginning in fiscal 1975, one-sixth of the use tax collections are distributed to municipalities in the same manner as provided for sales tax distribution using a percentage formula based on use tax collections to arrive at the amounts to be allocated to each county from out-of-state use tax collections.¹⁰ The estimated distribution for the City of Sheridan

⁷ Wyoming Department of Revenue and Taxation, *Annual Report, Fiscal Year 1974*, Cheyenne, 1974, p. A-11.

⁸ Ibid., p. A-3.

⁹ Ibid., p. A-3.

¹⁰ Ibid., p. 12.



and Sheridan County is \$20,000 and \$2,500, respectively, for fiscal 1975.¹¹

Cigarette tax: Cigarette tax has been \$0.08 per pack since 1967.¹² The state of Wyoming receives three-eighths, minus administrative expenses, of the amount collected. The remainder is distributed to counties and incorporated cities and towns according to sales distributions reported by cigarette wholesalers.¹³ During fiscal 1974, the City of Sheridan and Sheridan County received \$123,000 and \$7,577, respectively, in cigarette tax distributions.¹⁴

Gasoline tax: The motor vehicle gasoline tax is \$0.07 per gallon. It is distributed among the state, counties, and cities in a complex manner.¹⁵ Most of the portion distributed to local governments is required to be used for the construction and maintenance of roads and highways. A tax of aviation gas is also imposed and distributed in roughly the same manner and is to be used for the maintenance of the airfields in the locality where it is collected.¹⁶ During fiscal 1975, the distribution for the City of Sheridan and Sheridan County is estimated to be \$92,000 and \$149,000, respectively.¹⁷

¹¹ Budgets for the City of Sheridan and Sheridan County.

¹² Wyoming Department of Revenue and Taxation, *Annual Report, Fiscal Year 1976*, p. A-5.

¹³ *Ibid.*, p. A-13.

¹⁴ *Ibid.*, p. A-37.

¹⁵ *Ibid.*, p. A-10.

¹⁶ *Ibid.*, p. A-11.

¹⁷ Budgets for the City of Sheridan and Sheridan County.



CHAPTER III
ENVIRONMENTAL IMPACT OF THE PROPOSALS



PROJECTIONS OF EARNINGS AND EMPLOYMENT

The economy of the impact area may be conceptually divided into basic and derivative sectors. Basic industries are those which depend heavily on markets outside the area or are otherwise influenced by factors beyond its borders. Examples of basic industries are agriculture, railroads, the federal government, and, of course, mining. Derivative industries, on the other hand, principally serve the local population and include such businesses as wholesale and retail trade, services, and local government.

Economists believe that economic growth in small regions, such as the impact area, can be attributed to events outside the region and that changes in the basic industries will lead to further changes in the derivative industries. That is, basic industries sell their products outside the area or otherwise receive their funds from external sources. A significant portion of these "new" dollars are paid directly to workers in basic industries who, in turn, buy goods and services from local merchants. As these dollars are spent and respent within the local economy, they generate additional wages and salaries and may lead to new jobs in the derivative industries. The income expansion does not go on forever; sooner or later these dollars are spent for items not produced in the impact area and they exit from the local economy.

The primary impact--the increased earnings and employment in the basic industries--of the proposed Decker mines is outlined in table 1.1. Annual estimates of the number of permanent mine workers and construction

Table 1.1

Basic Employment and Earnings, Proposed Decker Mines
Big Horn-Sheridan Impact Area
1976 to 2000

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>	<u>2000</u>
<u>North Extension Mine</u>							
Total earnings (thousands of 1970 dollars)	\$1,647	\$1,054	\$1,079	\$1,104	\$1,129	\$1,269	\$1,791
Employment							
Total	125	75	75	75	75	75	75
Construction	50 ^a	--	--	--	--	--	--
Operation	70	70	70	70	70	70	70
Railroad	5	5	5	5	5	5	5
<u>East Decker Mine</u>							
Total earnings (thousands of 1970 dollars)	\$2,033	\$2,721	\$4,003	\$4,040	\$4,465	\$5,017	\$7,083
Employment							
Total	165	215	285	275	297	297	297
Construction	165	215	65	--	--	--	--
Operation			200	250	270	270	270
Railroad			20	25	27	27	27
<u>Total, North Extension and East Decker Mines</u>							
Total earnings (thousands of 1970 dollars)	\$3,680	\$3,775	\$5,082	\$5,144	\$5,594	\$6,286	\$8,874
Employment							
Total	290	290	360	350	372	372	372
Construction	215	215	65	--	--	--	--
Operation	70	70	270	320	340	340	340
Railroad	5	5	25	30	32	32	32

^aPrimarily heavy equipment operators and other workers needed to prepare site for mining.



employment were provided by the Decker Coal Company. The Burlington Northern Railroad estimates that, when at full production, the 12 million tons of coal to be mined annually will lead to about 32 new railroad jobs in the Sheridan area. This total was allocated between the two mines on the basis of permanent mine employment. Similarly, annual estimates of railroad employment before full production is reached is assumed to be proportional to the number of mine workers. Total basic earnings are presented in 1970 dollars to eliminate the effects of inflation. Current earnings per worker in each of the basic industries was estimated from information provided by the Decker Coal Company, the Burlington Northern Railroad, and the Montana Employment Security Commission. Future values were derived from national projections. The details of these calculations are presented in Appendix A.

The North Extension Mine is scheduled to begin production in 1976 with 70 mine workers and an estimated 5 railroad employees. In addition, there will be 50 heavy equipment operators and other workers needed to prepare the site for mining.¹ In 1977 and each year thereafter, permanent employment will number 75 workers, 70 in mine operation and 5 railroad employees. During 1976, the total earnings of construction workers, operation personnel, and railroad employees is projected to be \$1,647,000 (1970 dollars). In 1977, this figure will decline to \$1,054,000 (1970 dollars), due to the elimination of the site preparation jobs; but each year thereafter total earnings are projected to increase because of the rise in the (real) earnings per worker.

¹ The Decker Coal Company believes that some of these workers may be transferred to permanent mine positions.

The impact of the East Decker Mine, shown in table 1.1, will begin with the employment of 165 construction workers in 1976. The construction work force will grow to 215 positions in 1977 and then decline to 65 positions in 1978. Coal production will commence in 1978 and 200 permanent jobs will be created. Mining employment will grow to 250 workers in 1979 and then peak at 270 positions in 1980 and each year thereafter. The corresponding railroad employment will be 20 workers in 1978, 25 workers in 1979, and 27 workers for the years 1980 to 2000. Total earnings of workers at the East Decker Mine is projected to increase from \$2,033,000 in 1976 (1970 dollars) to \$4,465,000 (1970 dollars) in 1980 as the mine reaches full production. This figure is projected to increase further to \$7,083,000 (1970 dollars) by 2000 due to the rise in (real) earnings per worker.

Total earnings and employment for the North Extension and the East Decker Mines are summarized in the lower portion of table 1.1. In 1976, a total of 290 new basic jobs will be created. This figure rises to 372 new basic jobs in 1980 and each year thereafter as construction ends and the mines reach full production. Total basic earnings are projected to be \$3,680,000 (1970 dollars) in 1976 and then to grow to \$5,594,000 (1970 dollars) in 1980. Total earnings will increase further to \$8,874,000 (1970 dollars) in 2000.

The earnings of the construction, mining, and railroad workers represent an injection of new income into the impact area. As it is spent and respent within the region, additional incomes are created. The relationship between basic and derived earnings is usually summarized using an earnings multiplier. This figure is an estimate of the increase in earnings--the wages, salaries, and proprietor's income--in derivative



Industries created by an additional dollar of earnings in the basic Industries.² The earnings multiplier does not represent gross business activity--it does not measure the change in total sales. Rather, it is defined in terms of personal earnings to individuals, a figure which is net of the costs of productions.

The increase in derivative earnings and employment are projected to occur in Big Horn and Sheridan Counties. That is, Rosebud County has been excluded from the impact area. Although it is geographically situated near the proposed mine sites, there are few economic links to Rosebud County.³ Only a gravel road connects southeastern Big Horn County with Rosebud County and almost all of the commerce and community patterns in the area near the proposed mines are oriented toward Sheridan. In order to avoid confusion, the economic impact area will be hereafter denoted as the Big Horn-Sheridan impact area.

Based on the statistical analysis of the Big Horn-Sheridan impact area presented in Appendix A, derivative earnings are projected to increase by \$0.80 for each \$1.00 increase in the earnings of permanent mine workers and railroad employees, \$0.40 for each \$1.00 increase in earnings of construction workers, and to decrease by \$0.49 for each \$1.00 decline in gross farm receipts.

²This approach will underestimate the local economic impact to the extent that the basic industries make local purchases of goods and services in addition to the payroll of their employees. These purchases, sometimes called "linkages," are usually thought to be relatively small in rural areas with few firms engaged in intermediate production, where the output of one firm is an input for another.

³Statistical analysis of past data suggests there are no significant economic interrelationships between the Big Horn-Sheridan area and Rosebud County.



Projected derivative earnings for Decker mine proposals are presented in table 1.2. These figures are net of the negative impact on agriculture due to the removal of land from farm production at the mine sites. During 1976, the derivative earnings associated with the North Extension Mine are projected to be \$1,071,000 (1970 dollars). This figure declines to \$820,000 (1970 dollars) in 1977, due to the termination of the site preparation jobs, but then experiences steady growth to \$1,409,000 (1970 dollars) in 2000. Derivative earnings associated with the East Decker Mine are projected to be \$813,000 (1970 dollars) in 1976 and then grow to \$5,643,000 (1970 dollars) in 2000. Taken together, the two Decker mines are projected to be associated with an increase of \$1,884,000 (1970 dollars) in derivative earnings during 1976. This figure is projected to increase to \$7,052,000 (1970 dollars) in 2000. The greatest single year increase will occur during 1978, when production begins at the East Decker Mine.

The projected changes in derivative earnings are based on fairly reliable estimates derived from data for the Big Horn-Sheridan impact area. The changes in derivative employment, however, are much more difficult to predict. The increase in derivative jobs depends on the nature of the new positions. For example, the \$813,000 (1970 dollars) in derivative earnings associated with the East Decker Mine in 1976 could correspond to about 81 new derivative jobs if each paid \$10,000 per year. Or, approximately 162 new jobs at \$5,000 per year. In the absence of accurate and detailed projections of the characteristics of the new derivative jobs, there is almost an infinite number of possibilities for the change in derivative employment. A range of reasonable values, however, may be derived by making some judicious assumptions concerning the earnings of derivative workers.



Table 1.2

Projected Derivative Earnings and Potential New Derivative Jobs
Big Horn-Sheridan Impact Area
1976 to 2000

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>	<u>2000</u>
<u>North Extension Mine</u>							
Derivative earnings (thousands of 1970 dollars) ^a	\$1,071	\$ 820	\$ 840	\$ 857	\$ 880	\$ 992	\$1,409
Potential new derivative jobs							
"Average" jobs ^b	190	140	130	120	120	120	110
FTE jobs ^c	140	100	90	90	80	80	70
<u>East Decker Mine</u>							
Derivative earnings (thousands of 1970 dollars) ^a	\$ 813	\$1,089	\$2,865	\$3,209	\$3,548	\$3,990	\$5,643
Potential new derivative jobs							
"Average" jobs ^b	140	180	440	450	470	470	440
FTE jobs ^c	100	130	320	320	340	330	290
<u>Total, North Extension and East Decker Mine</u>							
Derivative earnings (thousands of 1970 dollars) ^a	\$1,884	\$1,909	\$3,705	\$4,068	\$4,428	\$4,982	\$7,052
Potential new derivative jobs							
"Average" jobs ^b	330	320	570	570	590	590	550
FTE jobs ^c	240	230	410	410	420	410	360

^aIncludes impact of projected decline in agricultural production due to mining activity.

^bNew derivative jobs are similar to existing positions.

^cNew derivative jobs are full-time positions (2,000 work hours per year).



The average derivative worker in the Big Horn-Sheridan impact area is projected to earn \$5,700 (1970 dollars) per year in 1976.⁴ Combining this value with the projected \$813,000 (1970 dollars) increase in total derivative earnings for the East Decker Mine yields an employment estimate of approximately 140 derivative workers. This figure corresponds to the assumption that the new jobs are, on the average, identical to the existing ones.

Many derivative positions, especially those in retail trade and the services, are part-time or seasonal. A second employment estimate may be made by assuming that all new derivative jobs are full-time; that is, they involve 40 hours a week for 50 weeks a year for a total of 2,000 hours of work per year. The average derivative worker is projected to work about 1,456 hours per year in 1976.⁵ This implies that the average derivative job corresponds to about .728 ($1,456/2,000 = .728$) Full Time Equivalents. If earnings are proportional to worktime, the FTE earnings of derivative workers would be about \$7,830 ($\$5,700/.728 = \$7,829.67$). Thus, if each job were a full-time position, the \$813,000 (1970 dollars) increase in derivative earnings would correspond to about 100 ($\$813,000/7,830 = 103.8$) new derivative workers.

The timing of the new derivative jobs presents an additional problem. Annual projections for derivative employment are presented for 1976 to 1980. But, simply because new positions may be needed at these times does not mean that more persons will be immediately put to work. For example, a business may experience an increase in sales so that it "needs"

⁴The details of this calculation are presented in Appendix A.

⁵The details are presented in Appendix A..



more employees; but the manager--perhaps out of ignorance or because he is cautious--may not immediately hire additional personnel. The projections have been labeled "potential new derivative jobs" and should be interpreted with a grain of salt; they are not precise predictions and are intended to only approximate the change in the derivative industries.⁶

The projections in table 1.2 show that the North Extension mine is associated with a potential of 190 new derivative jobs in 1976. The new positions are similar to the existing ones. This figure declines to 140 in 1977 and then to 110 in 2000. The FTE equivalents are 140 jobs in 1976, 100 in 1977, and then decreasing to 70 jobs in 2000. The East Decker Mine is projected to create about 140 potential new derivative jobs in 1976. The number of new jobs will peak at approximately 470 in 1980 and 1985 and then decline to about 440 positions in 2000. The FTE equivalents are 100 jobs in 1976, 340 and 330 jobs in 1980 and 1985, respectively, and 290 jobs in 2000. Taken together, the North Extension and the East Decker Mines have the potential for creating between 240 and 330 new derivative jobs in the Big Horn-Sheridan impact area during 1976. These figures reach a maximum of approximately 420 to 590 jobs in 1980 and 1985 and decline slightly to between 360 and 550 jobs in 2000.

The greatest attention will undoubtedly be centered on the new basic jobs directly concerned with the new Decker mines. The new derivative jobs will occur quietly throughout the local economy and will not be obviously identified with coal development. They will be represented by a new clerk at the grocery store, additional telephone repairmen

⁶The projected change in derivative earnings does not depend on the number of new derivative jobs. If fewer positions are created, the excess earnings may be paid to existing workers, perhaps in overtime pay or upgrading part-time jobs to full-time, or accrue to the owners in the form of increased proprietors' income.

transferred into the area, or an expanded service department at the auto dealership and will be indistinguishable from other jobs in retail trade, services and local government. That is, they will cater to the entire population, not just mines or other coal-related workers.

The total number of derivative jobs is projected to decline slightly after 1985 and there is a significant decrease associated with the North Extension Mine between 1976 and 1977. These vacillations should not be viewed with alarm and need imply that people will be suddenly thrown out of work. First of all, the projections of derivative employment, especially the annual figures for 1976 to 1980, are not very precise. For example, given the time lags present in the derivative industries, the entire 190 new jobs projected for the North Extension Mine in 1976 may not materialize. Secondly, the decline projected during the 1985-2000 period will occur over many years.⁷ Many jobs in the trades and services are part-time and have high employee turnover. Moderate declines may be accommodated through normal attrition.

A summary of the employment and earnings effects of the proposed Decker mines in the Big Horn-Sheridan impact area are presented in table 1.3. These figures show that, taken together, the mines are projected to directly and indirectly generate approximately \$5,564,000 (1970 dollars) in increased earnings in 1976.⁸ The corresponding growth in employment opportunities will be between 530 and 620 new jobs. Basic

⁷This decline is due to the projection that earnings per derivative worker will increase at a faster rate than earnings per basic worker.

⁸Projected earnings underestimate the change in personal income because they do not include transfer payments and property income. These items, however, are relatively independent of local economic conditions and the degree of understatement is probably small.



Table 1.3

Projected Basic and Derivative Earnings and Employment, Proposed Decker Mines
Big Horn-Sheridan Impact Area
1976 to 2000

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>	<u>2000</u>
<u>North Extension Mine</u>							
Basic and derivative earnings (thousands of 1970 dollars)	\$2,718	\$1,874	\$1,919	\$1,963	\$2,009	\$2,261	\$3,200
Basic and derivative employment ^b	265-315	175-215	165-205	165-195	155-195	155-195	145-185
<u>East Decker Mine</u>							
Basic and derivative earnings (thousands of 1970 dollars)	\$2,846	\$3,810	\$6,868	\$7,249	\$8,013	\$9,007	\$12,726
Basic and derivative employment ^b	265-305	345-395	605-725	595-725	637-767	627-767	587-737
<u>Total, North Extension and East Decker Mines</u>							
Basic and derivative earnings (thousands of 1970 dollars)	\$5,564	\$5,684	\$8,787	\$9,212	\$10,022	\$11,268	\$15,926
Basic and derivative employment ^b	530-620	520-610	770-930	760-920	792-962	782-962	732-922

Source: Tables 1.1 and 1.2.

^a Includes impact of projected decline in agricultural production due to mining activity.

^b The higher figure corresponds to the assumption that the new derivative jobs are similar to existing positions while the lower figure corresponds to the assumption that the new derivative jobs are full-time positions.



and derivative earnings are projected to increase throughout the life of the project. Employment opportunities will peak between 1980 and 1985 and will decline slowly in the following years.

The magnitude of the projected impacts may be put in perspective by comparing them to current levels of earnings and employment. During 1972, the Big Horn-Sheridan impact area had total earnings of about \$81,100,000 (1970 dollars) and total employment of 11,598. Therefore, the projected 1976 values represent about 7 percent of the 1972 level of earnings and between 4.5 and 5.3 percent of total employment. Since most of the workers will live in and near Sheridan the figures for the entire impact area may understate the effect on the local labor market. During 1972, total employment in Sheridan County was 7,856. The 1976 projected increase in total job opportunities represents between 6.7 and 7.9 percent of this figure.

The projected earnings per worker in coal-related and derivative industries in the Big Horn-Sheridan impact area are presented in table 1.4. The new coal-related jobs--the miners and railroad workers--will be well-paying positions; they are projected to average between \$14,098 (1970 dollars) and \$15,126 (1970 dollars) per year. This is well above the projected average earning of approximately \$12,000 per year for existing nonagricultural basic industries currently operating in the impact area.⁹ The high pay of these positions suggests the number of new derivative jobs created for each additional coal-related jobs will be well above the historic ratio of derivative-to-basic jobs for this area.

⁹ During 1972, nonagricultural basic industries paid, on the average, about \$9,400 (1970 dollars) per year. It was projected to rise at a 3 percent compound rate--a rather optimistic assumption--between 1972 and 1980.



Table 1.4

Projected Earnings per Worker
Coal-Related and Derivative Industries
Big Horn-Sheridan Impact Area
1980

(In 1970 Dollars)

	<u>Projected Earnings per Worker</u>
Coal-related industries	
Coal mining	\$15,126
Railroads	14,098
Derivative industries	
"Average" job	\$ 7,470
FTE jobs	10,430

Source: Appendix tables A-4 and A-5.



The derivative jobs, on the other hand, are projected to average \$7,470 (1970 dollars) per year in 1980, with FTE earnings of \$10,430 (1970 dollars) per year. The lower pay does not make these positions inherently undesirable. Many may be part-time and require little training. If historical patterns prevail, many of these jobs may go to women and young people, who appear to suffer disproportionately from real and disguised unemployment.

Earnings per worker in derivative industries are determined, to a great extent, by the conditions in the local labor market. The increase in the demand for labor is projected to cause these earnings to increase at a much faster rate between 1976 and 1980 than would have occurred in the absence of the proposed Decker mines. After 1980, however, impact due to the proposed Decker mines will have stabilized and there will be little effect on rate of change in earnings per derivative worker.¹⁰

¹⁰This process is detailed in Appendix A.



PROJECTED GOVERNMENT EXPENDITURES AND REVENUES

The change in government expenditures and revenues due to the proposed Decker mines are difficult to project in a reliable manner. In the first place, legislative action may alter the tax rates and other provisions of the tax laws. Secondly, the increased demand for public services are usually channeled through political processes and are subject to time lags and other influences not fully understood by social scientists. Finally, the precise changes in expenditures and revenues for individual government units will depend on where the new residents live and their choice of accommodations, i.e., whether they live inside the City of Sheridan and whether they build a single family dwelling or live in a mobile home. The projections of increased expenditures and revenues should not be viewed as precise forecasts of the financial situation of the various government units. Instead, they represent only the incremental effects of the proposed Decker mines on government expenditures and revenues. All projections are stated in 1970 dollars to eliminate the effect of inflation.

Governments in Montana

The 1975 Legislature made major revisions in the provisions of Montana's coal taxes. Even though these changes became effective July 1, 1975, all the legal implications have not yet been determined and the Montana Department of Revenue has not completely established the specific regulations and guidelines for the calculation of tax liabilities. The projections of the tax revenue from the proposed Decker mines are



based on preliminary interpretations of the relevant laws and conversations with the staff of the Montana Department of Revenue. They should, therefore, be interpreted with caution; later revisions in administrative procedures or new legal interpretations may significantly alter the potential revenue from these taxes.

The combined tax revenues from the North Extension and the East Decker Mines are presented in table 2.1. The figures for the individual mines are shown in tables 2.2 and 2.3. These projections are based on proposed levels of production and contract price information supplied by the Decker Coal Company. In order to calculate the tax liabilities, it was assumed that one-fourth of the annual coal production occurs during each calendar quarter. Also, to estimate the relevant contract price per ton, it was assumed that all of the Coal Mine License Tax, the Gross Proceeds Tax, and the Resource Indemnity Trust Tax will be passed through to the purchaser of the coal by the escalation clauses in the sales contracts. Projections are presented to 1980; the accuracy of these figures depends, of course, on the tax laws remaining constant throughout the period.

The largest source of revenue for Montana governments will be the Coal Mines License Tax. At full production levels, the North Extension and the East Decker Mines will generate about \$2,282,000 (1970 dollars), and \$12,707,000 (1970 dollars) to the State of Montana, respectively. Of this total, approximately \$5,436,000 (1970 dollars) will be earmarked for the Local Impact and Education Trust Fund. Until June 30, 1979, 7/11 of the revenue in this trust fund may be expended for grants to assist local governments and school districts in coal impact areas. After June 30, 1979, only 3/7 of the revenue may be spent in this manner. From 1976 through 1979, a total of \$2,375,500 (1970 dollars) of the



Table 2.1

Projected Increase in Total Tax Revenues, by Tax
North Extension Mine and the East Decker Mine

(1970 Dollars)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
<u>State of Montana</u>					
Coal Mines License Tax	\$1,702,500	\$2,270,100	\$11,339,700	\$14,774,200	\$14,988,800
Local Impact and Education Trust Fund	487,700	650,300	3,248,400	4,814,600	5,436,400
Coal Area Highway Improvement Account	177,400	236,500	1,181,300	762,300	--
Gross Proceeds Tax	--	19,100	19,100	120,000	124,600
Resource Indemnity Trust Tax	--	53,300	53,300	335,300	348,000
Property Tax	2,900	6,000	17,500	29,000	29,000
Montana Individual Income Tax	99,800	103,300	139,400	139,200	166,600
Total, all taxes	\$1,805,200	\$2,451,800	\$11,569,000	\$15,397,700	\$15,657,000
<u>Big Horn County</u>					
Coal Mines License Tax	\$ 70,900	\$ 94,600	\$ 472,500	\$ 615,600	\$ 543,700
Gross Proceeds Tax	--	237,700	237,700	1,493,700	1,550,700
Property Tax	37,300	74,600	218,100	361,600	361,700
Total, all taxes	\$ 108,200	\$ 406,900	\$ 928,300	\$ 2,470,900	\$ 2,456,100
<u>High School District 12</u>					
Gross Proceeds Tax	\$ --	\$ 7,200	\$ 7,200	\$ 45,100	\$ 46,800
Property Tax	1,100	2,200	6,600	10,900	10,900
Total, all taxes	\$ 1,100	\$ 9,400	\$ 13,800	\$ 56,000	\$ 57,700
<u>Elementary School District 1</u>					
Gross Proceeds Tax	\$ --	\$ 8,500	\$ 8,500	\$ 53,600	\$ 55,600
Property Tax	1,400	2,600	7,800	13,000	13,000
Total, all taxes	\$ 1,400	\$ 11,100	\$ 16,300	\$ 66,600	\$ 68,600

Note: See notes on tables 2.2 and 2.3 for assumptions used in projecting tax revenues.



Table 2.2
Projected Increase in Tax Revenues, by Tax
North Extension Mine

(1970 Dollars)

	1976	1977	1978	1979	1980
<u>State of Montana</u>					
Coal Mines License Tax	\$1,702,500	\$2,270,100	\$2,270,100	\$2,270,100	\$2,281,800
Local Impact and Education Trust Fund	487,700	650,300	650,300	738,900	827,600
Coal Area Highway Improvement Account	177,400	236,500	236,500	118,200	--
Gross Proceeds Tax	--	19,100	19,100	19,100	19,100
Resource Indemnity Trust Tax	--	53,300	53,300	53,300	53,300
Property Tax	2,900	5,900	5,800	5,800	5,800
Montana Individual Income Tax	43,900	30,400	30,400	30,400	34,300
Total, all taxes	\$1,749,300	\$2,378,800	\$2,378,700	\$2,378,700	\$2,394,300
<u>Big Horn County</u>					
Coal Mines License Tax	\$ 70,900	\$ 94,600	\$ 94,600	\$ 94,600	\$ 82,800
Gross Proceeds Tax	--	237,700	237,700	237,700	237,700
Property Tax	36,600	73,000	72,800	72,700	72,700
Total, all taxes	\$ 107,500	\$ 405,300	\$ 405,100	\$ 405,000	\$ 393,200
<u>High School District 12</u>					
Gross Proceeds Tax	\$ --	\$ 7,200	\$ 7,200	\$ 7,200	\$ 7,200
Property Tax	1,100	2,200	2,200	2,200	2,200
Total, all taxes	\$ 1,100	\$ 9,400	\$ 9,400	\$ 9,400	\$ 9,400
<u>Elementary School District 1</u>					
Gross Proceeds Tax	\$ --	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500
Property Tax	1,400	2,600	2,600	2,600	2,600
Total, all taxes	\$ 1,400	\$ 11,100	\$ 11,100	\$ 11,100	\$ 11,100

Note: The tax revenue projections are based on the following assumptions: a production level of 2 million tons per year (500,000 tons per quarter); a "contract sales price" of \$5.00 per ton; 100 percent of the Coal Mines License Tax, Gross Proceeds Tax, and Resource Indemnity Trust Tax are passed through to the purchaser; payment of the Coal Mines License Tax is made within 30 days of the end of each calendar quarter; payment of the Gross Proceeds Tax and the Resource Indemnity Trust Tax are made in the year following production; payment of the property tax is made one-half in the taxable year, one-half in the following year; payment of the Montana Individual Income Tax is made by withholding in the year the income is earned; property tax mill levies will remain at fiscal 1975 levels; the current coal and property tax laws will not be materially changed during the time period of the projections.



Table 2.3
Projected Increase in Tax Revenues, by Tax
East Decker Mine

(1970 Dollars)

	1976	1977	1978	1979	1980
<u>State of Montana</u>					
Coal Mines License Tax	\$ --	\$ --	\$9,069,600	\$12,504,100	\$12,707,000
Local Impact and Education Trust Fund	--	--	2,598,100	4,075,700	4,608,800
Coal Area Highway Improvement Account	--	--	944,800	644,100	--
Gross Proceeds Tax	--	--	--	100,900	105,500
Resource Indemnity Trust Tax	-- ^a	--	--	282,000	294,700
Property Tax		100	11,700	23,200	23,200
Montana Individual Income Tax	55,900	72,900	109,000	108,800	132,300
Total, all taxes	\$55,900	\$73,000	\$9,190,300	\$13,019,000	\$13,262,700
<u>Big Horn County</u>					
Coal Mines License Tax	\$ --	\$ --	\$ 377,900	\$ 521,000	\$ 460,900
Gross Proceeds Tax	--	--	--	1,256,000	1,313,000
Property Tax	700	1,600	145,300	288,900	289,000
Total, all taxes	\$ 700	\$ 1,600	\$ 523,200	\$ 2,065,900	\$ 2,062,900
<u>High School District 12</u>					
Gross Proceeds Tax	\$ -- ^a	\$ -- ^a	\$ --	\$ 37,900	\$ 39,600
Property tax			4,400	8,700	8,700
Total, all taxes	\$ ^a	\$ ^a	\$ 4,400	\$ 46,600	\$ 48,300
<u>Elementary School District 1</u>					
Gross Proceeds Tax	\$ -- ^a	\$ -- ^a	\$ --	\$ 45,100	\$ 47,100
Property Tax			5,200	10,400	10,400
Total, all taxes	\$ ^a	\$ ^a	\$ 5,200	\$ 55,500	\$ 57,500

Note: The tax revenue projections are based on the following assumptions: a production level of 10 million tons per year (2.5 million tons per quarter); an average "contract sales price" of \$5.2844 per ton in 1978 and \$5.5240 for subsequent years; 100 percent of the Coal Mines License Tax, Gross Proceeds Tax, and Resource Indemnity Trust Tax are passed through to the purchaser; payment of the Coal Mines License Tax is made within 30 days of the end of each calendar quarter; payment of the Gross Proceeds Tax and the Resource Indemnity Trust Tax are made in the year following production; payment of the property tax is made one-half in the taxable year, one-half in the following year; payment of the Montana Individual Income Tax is made by withholding in the year the income is earned; property tax mill levies will remain at fiscal 1975 levels; the current coal and property tax laws will not be materially changed during the time period of the projections.

^aLess than \$100.



Coal Mines License Tax revenues will accrue to the Coal Area Highway Improvement account for expenditure by the Department of Highways to improve the roads in coal development areas. Of course, there is no guarantee that the state will spend these local impact and highway trust fund revenues in Big Horn County, but it is likely that at least a portion will benefit this county.

The portion of the Coal Mines License Tax going directly to Big Horn County from both mines will total \$615,600 (1970 dollars) in 1979 and then drop slightly to \$543,700 in 1980 because of the decline in the county's percentage of the revenue from 4.0 percent to 3.5 percent.

The Gross Proceeds Tax revenue generated by the proposed projects should prove to be the largest source of new revenue to the county government. The gross proceeds of the mining operations, totaling about \$65,000,000 (1970 dollars) per year for the two projects will be added to the base of the property tax at 40 percent of its value. Based on 1975 mill levy rates for Big Horn County, this will add about \$1,551,000 (1970 dollars) to the county treasury during 1980. In addition, based on current mill levies, about \$125,000 (1970 dollars) will accrue to the State of Montana and \$100,000 (1970 dollars) to the two school districts in 1980.

The Resource Indemnity Trust Tax is based on the gross value of the product extracted which apparently will include the amount of the Coal Mines License Tax and Gross Proceeds Tax included in the final selling price, F.O.B. mine. Total revenue from this tax should be slightly under \$350,000 (1970 dollars) per year by 1980. This revenue will be credited to the Resources Indemnity Trust Fund of the State of Montana for later expenditure to "improve the total environment and rectify damage thereto."



Two sources of increase in the tax base were used to project property tax revenues; (1) the valuation of the mine plant, equipment, and railroad spur for both projects, and (2) the valuation of private housing developed to house new residents projected to live in Big Horn County.

Decker Coal Company estimates that construction and equipment costs will be \$10,000,000 for the North Expansion Mine and \$40,000,000 for the East Decker Mine, in current (1975) dollars. The addition of these mines to the tax roles will increase the taxable valuation of Big Horn County by \$1,200,000 and \$4,800,000, respectively, in current dollars.

The valuation of new housing in Big Horn County was based on the earlier projection (see table) that 10 percent of the new housing units would be single family dwellings and that 90 percent will be mobile homes or apartments. The selling price of the former is projected to be \$32,000 including land while the latter will average \$9,550 per unit, with both figures in current dollars. In 1980, new housing for the North Extension will add \$22,500 in taxable value to the tax roles and the East Decker Mine will add \$89,500 in taxable valuation, in current dollars.

The property tax revenues were derived by applying the 1975 mill levy rates applicable in Big Horn County to the total increase in taxable value for the county. In 1980 property tax collections should total \$414,600 (1970 dollars) as a result of both projects, with \$29,000 (1970 dollars) going to the state, \$361,700 (1970 dollars) to Big Horn County, and \$23,900 (1970 dollars) to the two school districts.

All incomes earned in Montana are subject to the Montana Individual Income Tax and the revenue is paid to the state. The earnings of all miners and construction employees working at the mine sites, even if they live in Wyoming, will be subject to this tax. Further, the tax



will also apply to increased derivative earnings in Montana. But, since the number of new derivative jobs in Big Horn County will probably be small, the projected income tax revenue is based only on the earnings of miners and construction workers.

The income tax rates are graduated starting at 2 percent for taxable incomes of less than \$1,000 and increasing to 11 percent for taxable incomes in excess of \$35,000.¹ The tax liability of each person depends on his deductions, exemptions, and adjustments. Based on all 1972 Montana income tax returns and adjusting for the change in the surtax, the following table of average tax liability by income brackets was derived.

<u>Montana Adjusted Gross Income</u>	<u>Average Tax</u>
\$12,000-12,999	\$339
13,000-13,999	385
14,000-14,999	435
15,000-15,999	490

These estimates were then applied to the number of coal mining and construction workers in each income bracket to derive the income tax revenue.

Tax revenues from the Montana Individual Income Tax are projected to be \$99,800 (1970 dollars) in 1976 and then grow to \$166,600 (1970 dollars) in 1980.

The revenues from the Montana Corporation License Tax are not projected because they would require the calculation of net income earned in Montana and would have to consider the overall corporate profitability as reflected by the federal corporate tax provisions.

¹Revised Codes of Montana, 1947, Section 84-4902.



Projected growth in operational expenditures for the State of Montana, Big Horn County, and the two affected school districts are presented in table 2.4. These figures are based on the assumption that each new resident adds \$75.00 (1970 dollars) to the expenditures of Big Horn County and \$300 to the expenditures of the State of Montana.² School operating costs were projected on the basis of \$700 (1970 dollars) per pupil, which approximates the 1973-74 average for school districts in the area. Increased construction costs for the affected school districts are also shown; they are projected using \$3,300 (1970 dollars) per pupil. The payments for additional facilities are only "one shot" expenditures and need not be repeated once the buildings are completed. The projected growth in expenditures for Montana governments probably overestimate the change which will actually occur. The increased population and school enrollments are very small when compared to current levels and may not require proportionate increases in all forms of government services.

The increase in expenditures for the State of Montana will be much less than the increase in tax revenues associated with the mine projects. As shown in table 2.4, the total increase in state expenditures is projected to be \$57,000 (1970 dollars) in 1980 compared to \$15,657,000 (1970 dollars) in tax revenues. Only during the construction phase (1976 and 1977) of the East Decker Mine, before coal production begins, will the increase in the state government expenditures for this mine total more than 10 percent of the corresponding increase in revenue.

²The projected expenditures are derived from Paul E. Polzin, *Water Use and Coal Development in Eastern Montana*, Bureau of Business and Economic Research, University of Montana, 1974, pp. 148-153.



Table 2.4
Projected Expenditures and Total Tax Revenues for Montana Governments
Proposed Decker Mines
(1970 Dollars)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
<u>North Extension Mine</u>					
State of Montana					
Expenditures	\$ 18,000	\$ 12,300	11,700	\$ 11,700	\$ 11,100
Revenues, all taxes	1,749,300	2,378,800	\$2,378,700	2,378,700	2,394,300
Big Horn County					
Expenditures	4,500	3,100	2,900	2,900	2,800
Revenues, all taxes	107,500	405,300	405,100	405,000	393,200
High School District 12 and Elementary School District 1					
Expenditures, operating	11,900	8,400	8,400	8,400	7,700
Additional facilities	56,100				
Expenditures, total	68,000	8,400	8,400	8,400	7,700
Revenues, all taxes	2,500	20,500	20,500	20,500	20,500
<u>East Decker Mine</u>					
State of Montana					
Expenditures	16,800	21,900	42,300	42,900	45,900
Revenues, all taxes	55,900	73,000	9,190,300	13,019,000	13,262,700
Big Horn County					
Expenditures	4,200	5,500	10,600	10,700	11,500
Revenues, all taxes	700	1,600	523,200	2,065,900	2,062,900
High School District 12 and Elementary District 1					
Expenditures, operating	10,500	13,300	28,700	29,400	31,500
Additional facilities	62,700		85,800		
Expenditures, total	73,200	13,300	114,500	29,400	31,500
Revenues, all taxes	-- ^a	-- ^a	5,200	55,500	57,500
<u>Total, North Extension and East Decker Mines</u>					
State of Montana					
Expenditures	34,800	34,200	54,000	54,600	57,000
Revenues, all taxes	1,805,200	2,451,800	11,569,000	15,397,700	15,657,000
Big Horn County					
Expenditures	8,700	8,600	13,500	13,600	14,250
Revenues, all taxes	108,200	406,900	928,300	2,470,900	2,456,100
High School District 12 and Elementary District 1					
Expenditures, operating	22,400	21,700	37,100	37,800	39,200
Additional facilities	118,800		85,800		
Expenditures, total	141,200	21,700	122,900	37,800	39,200
Revenues, all taxes	2,500	20,500	25,700	76,000	78,000

^a Less than \$100.



The situation will be much the same for Big Horn County. Total additional expenditures from the combined mines will be \$14,250 (1970 dollars) in 1980 and tax revenues will be \$2,456,000 (1970 dollars). During the construction period of the East Decker Mine, expenditures will exceed revenues slightly (by \$3,500 in 1976 and \$3,900 in 1977); but, if both projects are approved, total revenues from the two mines will be about 12 times the additional expenditures in 1976, and about 47 times as large in 1977.

The projections for High School District 12 and Elementary District 1, in table 2.4, indicate that taxes levied by the school districts will not be sufficient to cover the projected facilities construction or the operating costs of the districts until 1979. However, the revenues projected for the Montana school districts represent only the tax revenue from the districts' mill levies and do not include the county and state levies for the education equilization program which provide most of the districts' funding. Since about half of the county's property tax and gross proceeds tax collections are earmarked for education, and 10 percent of the Coal Mines License Tax and 25 percent of the state income tax revenues are earmarked for education equilization aid, increases in these taxes will more than offset any deficits in the districts' operating budgets. The projected capital expenditures may not be required if the additional school children (which are projected to number less than 60) are to be distributed throughout the districts to utilize any existing excess capacity.

Governments in Sheridan County, Wyoming

Increased expenditures and revenues are projected for Sheridan County, the City of Sheridan, and Sheridan School District 2. Unlike Montana, annual projections are not presented. Instead, expenditures



and revenues are projected for a "typical" year during the operational phase of the proposed mines. These figures may more accurately reflect the long-run trends as they affect local governments. The year 1980 was chosen because it is after the construction period and both proposed mines are scheduled to be in full production.

The increase in operational expenditures due to the proposed Decker mines are projected for the City of Sheridan and Sheridan County. These figures do not include capital items, such as a new courthouse or sewer plant which require only a "one shot" expenditure of funds, nor do they include the repayment of debt and interest charges due to new buildings and facilities. Operating expenses include ongoing activities which are financed on a continuing basis are likely to be affected by the proposed Decker mines.

The per capita operating expenses for the City of Sheridan and Sheridan County are projected to be \$104.00 (1970 dollars) and \$47.00 (1970 dollars), respectively, during 1980. These figures approximate the budgeted expenditures for selected categories during fiscal 1975.³ There is some evidence that per capita expenditures in northern Wyoming communities tend to decline with increased population.⁴ Also, it is assumed that the entire increase in the population of Sheridan County will occur in the City of Sheridan. This implies there may be some double counting of expenditures. For example, it is doubtful that

³For the City of Sheridan, they include all General Fund expenditures less Federal Revenue Sharing projects. The expenditures for Sheridan County include General Fund expenditures (less Federal Revenue Sharing Projects), the Welfare and Health Funds, the Library Fund, and the Fair Fund.

⁴Intermountain Planners and Werth-Berger Associates, *Capital Facilities Study Powder River Basin*, a report for the Wyoming Department of Economic Planning and Development, 1974, pp. 61-85.



the expenses of the Sheriff's Office will increase by the full amount if all the new residents are also within the jurisdiction of the Sheridan Police Department. In short, the projected increases are probably on the high side and should be interpreted as estimating the maximum potential rise in expenditures.

Revenue projections for 1980 were derived for the increase in local property taxes and the distributions of the sales and uses taxes, the cigarette tax, and the gasoline tax. Because it is required to be used mostly for streets and roads, the projected gasoline tax distribution is listed separately.

The change in local property taxes was derived by first projecting the increase in assessed valuation and then applying the appropriate mill rates for the City of Sheridan and Sheridan County. These projections may quickly become obsolete because Wyoming is presently implementing a new statewide assessment policy. The full implications of the new practices for assessed valuation and the associated mill levies is not yet known. The projected property tax revenues are probably very conservative because the growth in assessed valuation is due only to the additional homes, apartments, and mobile homes of the new residents. The additional personal property and the increased valuation of businesses have been excluded.⁵

According to the housing projections presented elsewhere in this report, about 10 percent of the new housing units will be single family dwellings and the remainder will be mobile homes or apartments.⁶ The

⁵The new housing units associated with the Decker mines are projected to consist mostly of mobile homes. This is a significant departure from the current dominance of single family dwellings. Thus, historical figures for assessed value per capita may not be a reliable indicator for future trends.



selling price of the former is projected to be \$32,000 (1970 dollars) including land, while the latter are projected to average \$9,550 (1970 dollars) per unit. The ratio of assessed value to selling price is projected to be .17, approximately the value for selected Wyoming counties during 1971.⁷ The tax rates for the City of Sheridan and Sheridan County are 7.4 and 9.04 mills, respectively, which are equal to the rates for fiscal 1975.⁸

The increase in retail sales for Sheridan County has not been projected. But, between 1969 and 1973, the total sales tax distribution to all government units in Sheridan County consistently averaged between 0.29 and 0.31 percent of total personal income.⁹ During this period, one-sixth of the tax collections less administrative costs were returned to local governments. Beginning in 1975, this figure rises to one-third and a portion of the use tax is also included in the distribution. For 1980, sales and use tax distributions are projected to be 0.62 percent of the change in personal income with the City of Sheridan and Sheridan County receiving 61 percent and 35 percent of the total, respectively.¹⁰ The change in personal income is approximated by the projected increase

⁷U.S. Bureau of the Census, Census of Governments, 1972, Part 2: *Assessment-Sales Price Ratios and Tax Rates* (Washington, D.C.: U.S. Government Printing Office, 1973), table 11.

⁸The City of Sheridan levy includes only the mill rate for the General Fund. The Sheridan County figure includes levies for the General Fund, the Fair Fund, the Library Fund, and General Welfare and Health.

⁹Wyoming Department of Revenue and Taxation, *Annual Report, Fiscal Year 1974*, Cheyenne, 1974, pp. A-34 to A-36.

¹⁰The remaining four percent would be distributed to Clearmont, Dayton, and Ranchester. The proportion allocated to the City of Sheridan will probably increase based on 1980 Census of Population.



In basic and derivative earnings shown in table 1.3; it is assumed that they are distributed in the same manner as population and that 90 percent accrues to Sheridan County residents.¹¹

Cigarette tax distributions to all governments in Sheridan County have averaged between \$6.50 (1970 dollars) and \$5.50 (1970 dollars) per capita between 1971 and 1974.¹² There has been a definite downward trend during this period. The total distribution is projected to be \$5.00 (1970 dollars) per capita in 1980 and 88 percent will be allocated to the City of Sheridan and 6 percent to Sheridan County.

Gasoline tax distributions to Sheridan County governments averaged about \$12.50 (1970 dollars) per capita between 1971 and 1973.¹³ This figure declined to about \$9.50 (1970 dollars) in 1974, possibly due to rising gasoline prices and the energy crisis. Higher gasoline prices are certain to continue and they will tend to dampen future growth in consumption. On the other hand, many of the workers will commute to the mines and may consume more gasoline than the average person. Consequently, a compromise figure of \$11.00 (1970 dollars) per capita for the total gasoline tax distribution is projected, with 48 percent allocated to both the City of Sheridan and Sheridan County.

The potential increases in operational expenditures and tax revenues for the City of Sheridan and Sheridan County during 1980 are presented in table 2.5. For the North Extension Mine, operational expenditures for Sheridan County and the City of Sheridan are projected to increase

¹¹As discussed earlier, the increase in personal income will probably exceed the rise in earnings. Thus, the estimate of the sales and use tax distribution is probably conservative.

¹²Wyoming Department of Revenue and Taxation, *Annual Report, Fiscal Year 1975*, pp. A-37 to A-39.

¹³Budgets for the City of Sheridan and Sheridan County.



Table 2.5

Increase in Government Expenditures and Tax Revenues
City of Sheridan and Sheridan County
1980

	<u>North Extension Mine</u>	<u>East Decker Mine</u>	<u>Total, North Extension and East Decker Mines</u>
<u>Sheridan County</u>			
Increase in operational expenditures (1970 dollars) ^a	\$15,700	\$ 64,800	\$ 80,500
Increase in tax revenue (1970 dollars)			
Local property taxes	2,500	10,400	12,900
Sales and use tax distributions	3,900	15,600	19,500
Cigarette tax distribution	100	400	500
Subtotal	6,500	26,400	32,900
Gasoline tax distribution	1,800	7,300	9,100
Total, all taxes	\$ 8,300	\$ 33,700	\$ 42,000
<u>City of Sheridan</u>			
Increase in operational expenditures (1970 dollars) ^b	\$34,700	\$143,300	\$178,000
Increase in tax revenue (1970 dollars)			
Local property taxes	2,100	8,500	10,600
Sales and use tax distributions	6,800	27,300	34,100
Cigarette tax distribution	1,500	6,100	7,600
Subtotal	10,400	41,900	52,300
Gasoline tax distribution	1,800	7,300	9,100
TOTAL, all taxes	\$12,200	\$ 49,200	\$ 61,400

^a Includes General Fund expenditures less Federal Revenue Sharing projects.

^b Includes General Fund expenditures (less Federal Revenue Sharing projects), Welfare and Health Funds, Library Fund, and the Fair Fund.



by \$15,700 (1970 dollars) and \$34,700 (1970 dollars), respectively, while the corresponding growth in tax revenues (including the gasoline tax) will be \$8,300 (1970 dollars) and \$12,200 (1970 dollars), respectively. The East Decker Mine will be associated with expenditure increases of \$64,800 (1970 dollars) and \$143,300 (1970 dollars) for Sheridan County and the City of Sheridan. Tax revenues are projected to increase by \$33,700 (1970 dollars) and \$49,200 (1970 dollars), respectively. Taken together, the proposed Decker mines are projected to increase the expenditures of Sheridan County by \$80,500 (1970 dollars) and tax revenues by \$42,000 (1970 dollars) in 1980. The City of Sheridan will experience an increase of \$178,000 (1970 dollars) in expenditures and \$61,400 (1970 dollars) in tax revenue.

The figures in table 2.5 show the projected increase in expenditures significantly greater than the growth in tax revenue. Expenditures have been intentionally overestimated while tax revenue projections are very conservative. Further, other nontax revenue--such as fees and licenses--are not included and these sources contributed significantly to the growth in expenditures during recent years. In short, these figures probably represent the worst possible outcome.

The projected increases in operational expenditures and revenues and the cumulative school construction costs for Sheridan School District 2 are presented in table 2.6. The projected increase in operational expenditures and school construction costs are based on the assumption that school children due to the proposed Decker mines cannot be accommodated with present resources and that additional staff and buildings must be supplied. During 1973, most Sheridan schools were at or near capacity.¹⁴ Based on the relatively constant number of births to

¹⁴ *Capital Facilities Study, Powder River Basin*, p. 26.

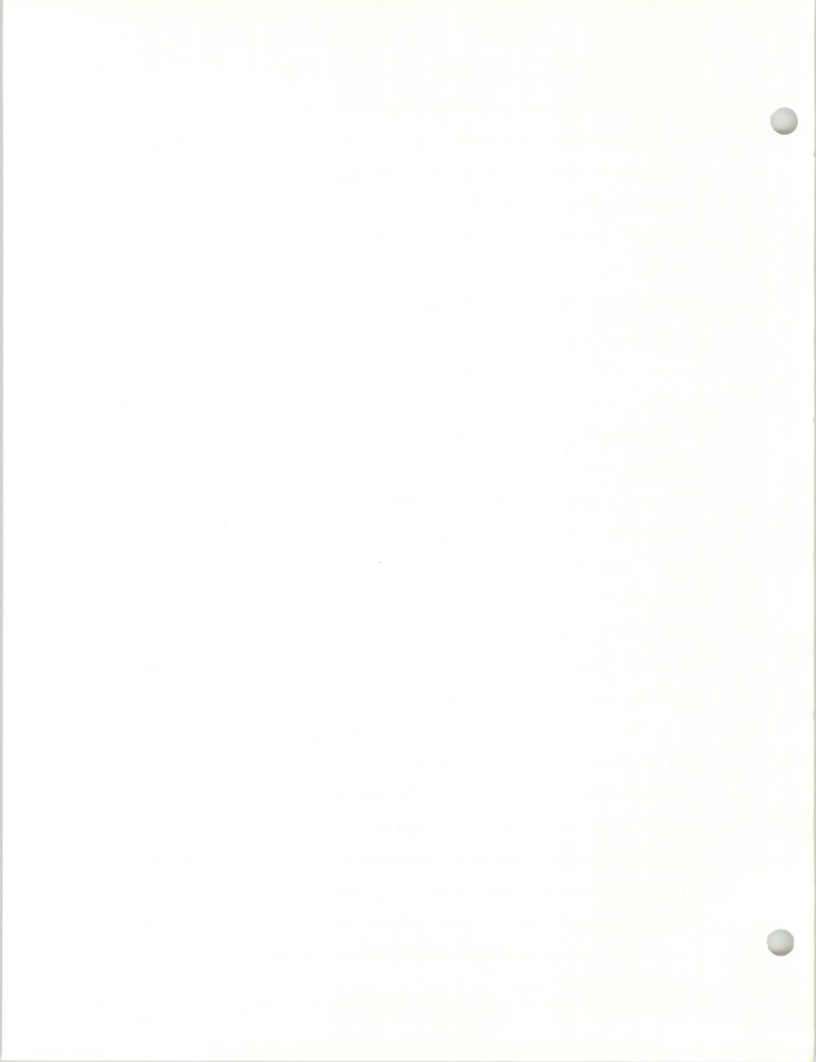


Table 2.6

Projected Potential Increase in Operational Expenditures and
Revenues, and School Construction Costs
Sheridan School District 2
1980

	North Extension Mine	East Decker Mine	Total, North Extension and East Decker Mines
Increase in operational expenditures (1970 dollars)	\$ 73,900	\$ 306,900	\$ 380,900
Increase in revenue (1970 dollars)			
Local property taxes	13,400	54,600	68,000
State aid	38,300	159,000	197,300
Total	51,700	213,600	265,300
School construction costs (1970 dollars) ^a	\$372,000	\$1,544,000	\$1,916,000

^a Cumulative to 1980.



Sheridan County residents since 1970, a good prediction of enrollment later in the decade, it appears unlikely that there will be excess capacity in the present facilities.

Operational expenditures are projected to average \$795 (1970 dollars) per ADM (Average Daily Membership), approximately equal to the actual expenditures in Sheridan School District 2 during the 1973-74 school year.¹⁵ There is evidence that the cost per pupil tends to decrease with enrollment growth for school districts in Wyoming.¹⁶ Therefore, the projected increases in operational expenditures are probably on the high side. The projected number of school children is shown in table

Property tax revenues are projected by applying the 1974-75 levy of 47.66 mills for District 2 to the increase in assessed valuation estimated earlier, which is assumed to be entirely within the school district. The amount of state aid will depend on Wyoming legislature and their funding of the Foundation Program. During the 1973-74 school year, state aid averaged \$412 (1970 dollars) per ADM for Sheridan District 2.¹⁷ This figure is used for the 1980 projection. School construction costs are projected to average \$4,000 per ADM.¹⁸ The projected construction costs are the cumulative totals for the 1976-1980 period.

¹⁵ Wyoming Department of Education, *Wyoming Public School Fund Accounting and Reporting, 1973-74*, Cheyenne, 1974, pp. 46-47. Average Daily Membership is a standardized measure of enrollment. During 1973, it averaged about 95 percent of total enrollment.

¹⁶ *Capital Facilities Study, Powder River Basin*, pp. 67-69.

¹⁷ *Wyoming Public School Fund Accounting and Reporting, 1973-74*, p. 46.

¹⁸ Wyoming Department of Education, "An Impact Report on Public School Facility Needs," Cheyenne, 1974, mimeo., 1974, p. 5.

*This can't
be
absolute
what are
the limits?*



The North Extension Mine is projected to increase school operational costs by \$73,900 (1970 dollars) with a corresponding increase of \$51,700 (1970 dollars) in revenue during 1980. Operational expenditures and revenues associated with the East Decker Mine are projected to be \$306,900 (1970 dollars) and \$213,600 (1970 dollars), respectively, in 1980. These figures suggest that, for both mines, the increase in operational expenditures will exceed additional revenues. However, as with the other estimates of government finances, these projections utilize very conservative assumptions and probably represent the least favorable outcome.

The construction of additional school facilities is projected to total \$372,000 (1970 dollars) for the North Extension Mine and \$1,544,000 (1970 dollars) for the East Decker Mine in 1980. The financing of these facilities is likely to be a serious problem because the Sheridan School District has bonded indebtedness of almost 92 percent of its legal bonding capacity.¹⁹ As of June 30, 1974, there was less than \$207,000 (1970 dollars) in unobligated bonding capacity remaining. The projected growth in taxable valuation will probably not sufficiently increase the legal bonding capacity to allow for the financing of the projected construction expenditures.

The additional costs of new capital items for the local governments in Sheridan County are not projected. Many of the existing facilities are already overcrowded or inadequate.²⁰ But, these are problems which

¹⁹Wyoming Public School Fund Accounting and Reporting, 1973-74, p. 76.

²⁰Capital Facilities Study, Powder River Basin, pp. 20-23.



currently exist and are not directly attributable to the proposed Decker mines. The plight of the Sheridan sewer system, however, has received significant public attention and is discussed in detail.

The Sheridan sewage treatment plant was updated in 1966 and can accommodate, with current standards, a population of up to 16,000 persons. Thus, the proposed Decker mines will not, by themselves, cause a sufficient increase in population to require expansion of the treatment plant. But, there is currently some effluent being released into Goose Creek and the Environmental Protection Agency has required this to be eliminated by 1985. The construction of a new plant with the capacity of serving 20,000-25,000 residents and meeting the EPA requirements has been estimated to be between \$1,800,000 and \$2,000,000 (current dollars).²¹ Even if 75 percent of this amount were financed by federal funds, Sheridan does not have the bonding capacity necessary to issue new bonds.²² If this problem can be circumvented, revenue bonds could be issued with redemption and interest payments derived from higher sewer charges. In total, a new sewer treatment plant would cost Sheridan sewer customers about \$3.90 (current dollars) per person per year.²³

²¹ National Commission on Water Quality, *Draft Final Report of the Yellowstone Regional Assessment Study*, vol. 1, Washington, D.C., 1975, pp. 144-151.

²² Ibid.

²³ Ibid.



CHAPTER IV
ADDITIONAL MITIGATING OR COMPENSATING MEASURES

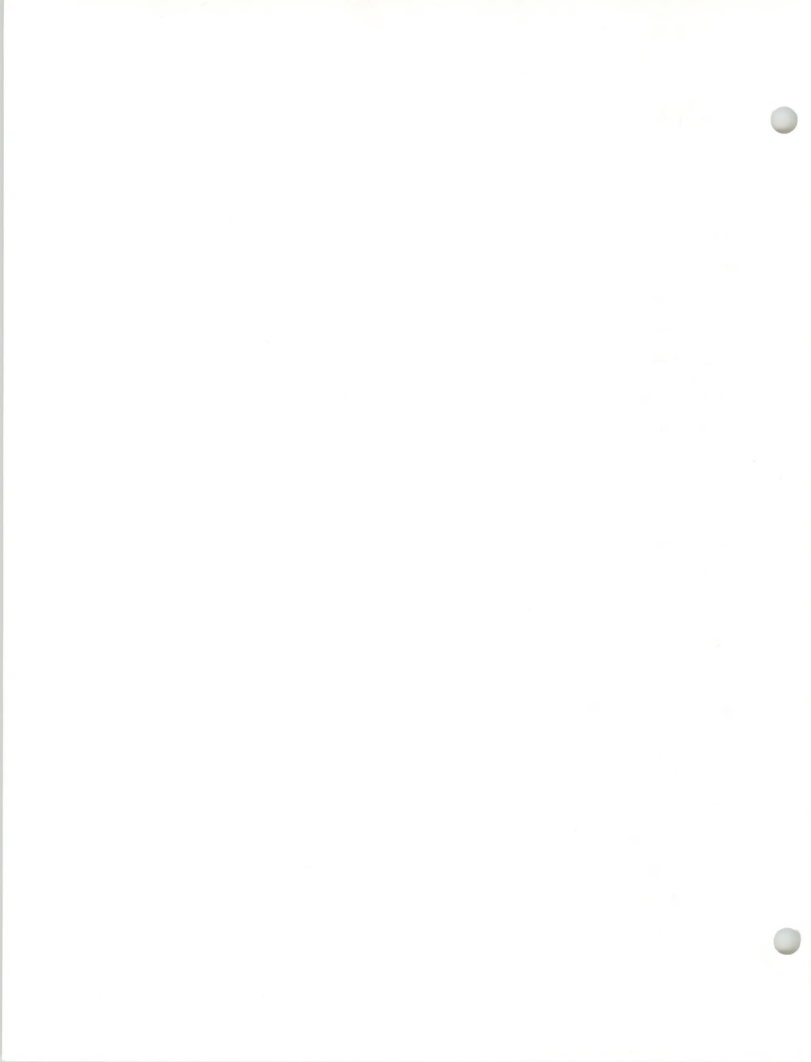


MITIGATING OR COMPENSATING MEASURES

Economics

The projected economic impacts of the proposed Decker mines cannot, for the most part, be obviously classified as either "costs" or "benefits." That is, the same event may be interpreted as an improvement by some persons while others view it with disfavor. In cases such as these, proposals for mitigating action must be examined very carefully because there is the possibility that the reduction of costs to one group may also reduce the benefits to others and, in the process, more problems are created than solved.

The proposed Decker mines will increase the demand for workers in the Sheridan area. Existing employers may find that they must pay higher wages in order to retain employees or they may be unable to find workers at existing pay scales. On the other hand, the increase in job availability may provide positions for the unemployed (both real and disguised), allow persons with only part-time jobs to move into full-time employment, and provide opportunities for low wage workers to advance into higher paying positions. Most attention will undoubtedly be centered on the new well-paying mining positions. But, the new derivative jobs--the clerks, shopkeepers, and service personnel--should not be forgotten. They will occur quietly throughout the economy and will not be obviously associated with coal development. On the average, they will be lower paying than the mining positions. But they usually require less training and, if historical patterns prevail, many will be filled by females and the young.

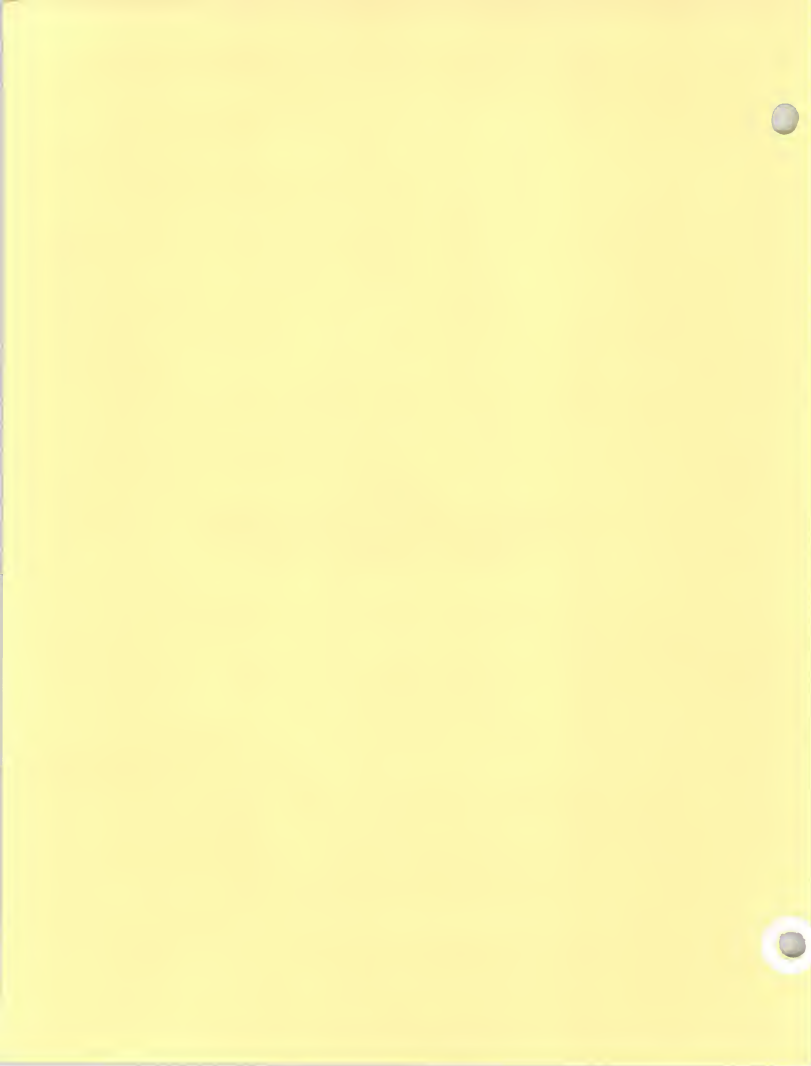


The increased population associated with the new mines will place an additional strain on the already tight housing market in the Sheridan area. Rents and property values will rise and adversely effect renters and persons seeking to build new homes. On the other hand, property owners will experience a capital gain; about 60 percent of the dwelling units in Sheridan County--66 percent in the city of Sheridan--are owner-occupied.¹

¹ U.S. Bureau of the Census, Census of Housing: 1970, Vol. 1, Housing Characteristics for States, Cities, and Counties, Part 52, *Wyoming*, Washington, D.C., U.S. Government Printing Office, 1972, tables 1 and 60.

CHAPTER V

ADVERSE IMPACTS THAT CANNOT BE AVOIDED
IF THE PROPOSALS ARE IMPLEMENTED



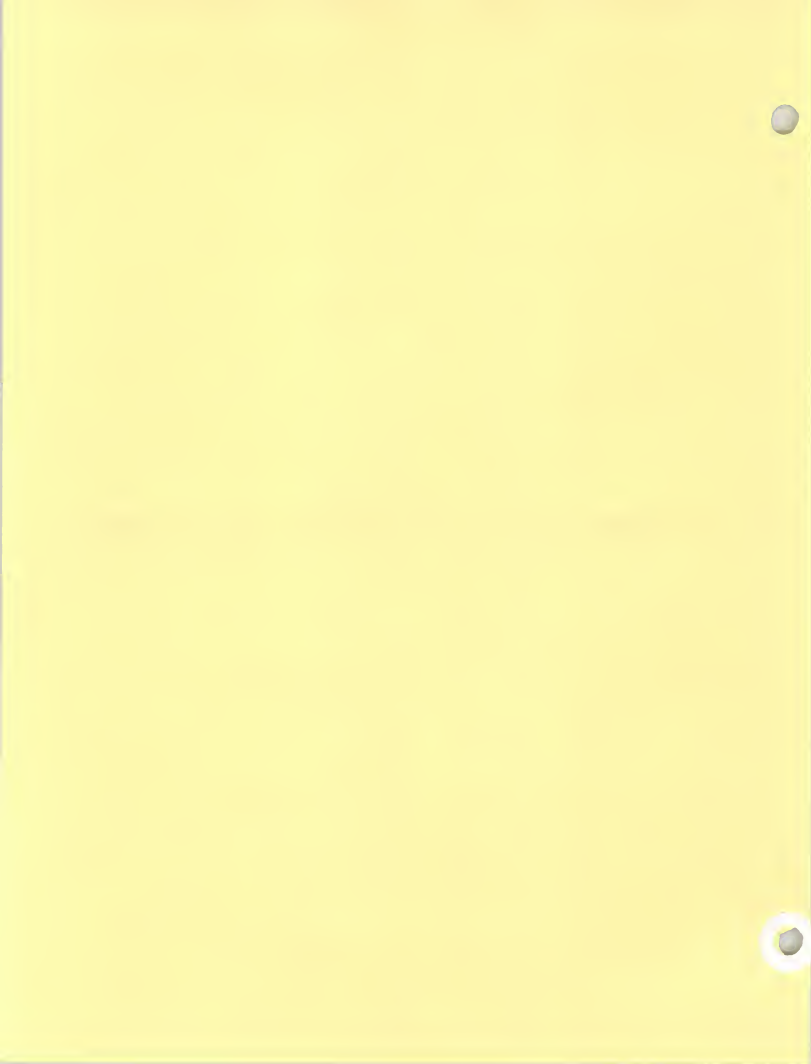
ADVERSE IMPACT THAT CANNOT BE AVOIDED IF THE PROPOSALS ARE IMPLEMENTED

Economics

The state of Montana and local governments in the Montana portion of the impact area are projected to have sizable revenue surpluses from the proposed Decker mines. Governments in Wyoming, however, will probably experience deficits. At first glance, the solution simply requires transferring funds from one area to another. But, abstracting from purely political issues, this would involve actions by two state governments plus numerous local governments and require an unprecedented degree of coordination and cooperation. Due to present institutional constraints, therefore, some inequities are almost inevitable and there is little hope of solving them in the near future.

CHAPTER VI

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND
THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY



RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Economics

The proposed Decker mines, with a lifespan of twenty-five years, have been viewed by some as a short-run project which provides only temporary benefits to the area. But, twenty-five years of relatively certain production compares favorably with other forms of industrial development. The same degree of certainty could not be assigned to, for example, a new carpet mill, canning factory, or slaughterhouse. Also, many changes can occur over a quarter of a century; almost no one predicted in 1950 that agricultural jobs would decrease by almost one-half by 1975.¹ Or, very few persons anticipated the current situation in the tourist industry, dependent as it is upon the uncertainties and increasingly expensive sources of fuel. In short, very few industrial developments carry with them assurances of long-term permanence; but, when compared to other projects which are feasible for the area, coal mining has many advantages.

CHAPTER VII
IRREVERSIBLE AND IRRETRIEVABLE
COMMITMENTS OF RESOURCES



IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Economics

The Decker Coal Company proposes to fence a total of approximately 6,300 acres and remove them from agricultural production for the life of the mines. Only a portion will actually be mined. The displacement of this land will reduce the total output of farms and ranches in the area. The decline in gross farm receipts is (optimistically) projected to be about \$95,000 (1970 dollars) per year. The adverse economic impact of this action will be relatively minor. The 6,300 acres is only slightly larger than the average farm or ranch in the impact area and the projected decline in gross farm receipts represents about 0.4 percent of the reported total in Big Horn County during 1973.¹

¹ Montana Department of Agriculture and U.S. Statistical Reporting Service, *Montana Agricultural Statistics*, Volume XV, Helena, 1974, p. 13.

SUPPLEMENT



Appendix A

Statistical Findings and Projection Methodology

Employment and earnings were projected with a variant of economic base analysis. This procedure was developed at the Bureau of Business and Economic Research, University of Montana, and has been used in other studies of coal-related development in Montana.¹ It may be summarized as follows: employment and earnings due to coal-related activities are viewed as additions to exogenous (basic) industries. A "multiplier" is then used to estimate the associated increase in endogenous (derivative) earnings. Average and FTE earnings per derivative jobs were projected separately and then combined with the projected (total) derivative earnings to obtain the number of new derivative jobs.

The Multiplier

The relationship between the basic and derivative industries forms the foundation of the methodology and will be discussed in detail. A small regional economy may be divided into endogenous and exogenous sectors and the former is conceived to be functionally dependent on the latter. Empirically, the exogenous sector consists of export industries, such as agriculture, mining, selected manufacturing classifications, railroads, certain types of construction, and the federal government. On the other

¹ Paul E. Polzin, *Water Use and Coal Development in Eastern Montana*, Bureau of Business and Economic Research, University of Montana, 1974, pp. A-1 to A-15. "An Income Model for the State of Montana," Bureau of Business and Economic Research, University of Montana, unpublished manuscript, 1975.



hand, the endogenous (or derivative) sector includes the trade, services, and other industries serving the local population.

The relationship between the basic and derivative sectors may be summarized in the following equation

$$(1) \quad D = a + bX + CF.$$

Where D is total derivative earnings, X is total nonagricultural basic earnings, and F is gross farm receipts. The model is phrased in terms of earnings rather than employment because this version is less likely to have specification errors, given the limited data available for counties. Farm receipts rather than farm earnings were used because the studies cited earlier concluded that it more accurately represented determinants of spending patterns in agriculture.

The basic and derivative sectors for Big Horn and Sheridan counties are shown in tables A-1 and A-2. The sector definitions are in terms of industries and follow the Standard Industrial Classification (SIC) and the classification used by the U.S. Bureau of Economic Analysis. Entire industries were classified as either basic or derivative on an a priori basis. There was no attempt to empirically categorize industries into basic and derivative components. When the nature of an industry was in doubt, a higher degree of disaggregation was used, i.e., 3-digit instead of 2-digit, or the entire industry was placed in the derivative sector.

Earnings for nonagricultural industries and gross farm receipts were taken from the U.S. Bureau of Economic Analysis' estimates of *Personal Income by Major Sources* and *Farm Income and Expenditures*. This source provides figures for broad industrial categories on an annual basis between 1965 and 1973. Unpublished data provided by the Montana Department of Labor and Industry, Employment Security Division, and *County Business*



Table A-1

Basic and Derivative Industries
Sheridan County, Wyoming

Basic Industries		Derivative Industries	
<u>Industry</u>	<u>SIC Code</u>	<u>Industry</u>	<u>SIC Code</u>
Agriculture	--		
Mining	10-14		
Construction		Construction	
Building construction	15	Special trade contractors	17
Heavy construction	16		
Manufacturing		Manufacturing	
All other manufacturing	21-39	Food and kindred products	20
Transportation, communication, and public utilities		Transportation, communication, and public utilities	
Railroads	40	All other transportation, communication and public utilities	41-49
		Wholesale and retail trade	50-59
		Finance, insurance, and real estate	60-67
Services		Services	
Hotels, motels, and rooming houses	70	All other services	71-89
Federal government		State and local governments	--
Federal civilian	--		
Federal military	--		
		All other industries	--



Table A-2

Basic and Derivative Industries
Big Horn County, Montana

Basic Industries		Derivative Industries	
<u>Industry</u>	<u>SIC Code</u>	<u>Industry</u>	<u>SIC Code</u>
Agriculture	--		
Mining	10-14		
Construction		Construction	
Building construction	15	Special trade contractors	17
Heavy construction	16		
Manufacturing		Manufacturing	
All other manufacturing ^a	204,206	Printing and publishing	27
	227,24,367	Concrete products	327
Transportation, communication, and public utilities		Transportation, communication, and public utilities	
Railroads	40	All other transportation, communication, and public utilities	41-49
		Wholesale and retail trade	50-59
		Finance, insurance, and real estate	60-67
Services		Services	
Hotels, motels, and rooming houses	70	All other services	71-89
Federal government		State and local governments	--
Federal civilian	--		
Federal military	--	All other industries	--

^a Includes industries not in continuous operation between 1965 and 1973.

Patterns were used to derive values for the 2- and 3-digit industries. These sources provided a time series of nine observations, 1965 through 1973, for derivative and nonagricultural basic earnings and gross farm receipts for Big Horn and Sheridan Counties. The number of observations was limited by the availability of data for Sheridan County.

The parameters of the model--"a," "b," and "c," in equation (1)--were estimated with regression analysis. A summary of the findings are presented in table A-3. Alternative specifications were estimated and it was found that gross farm receipts lagged one period gave the best results.²

The regression coefficients on nonagricultural basic earnings and gross farm receipts are statistically significant according to accepted social science criteria. A test for autocorrelation of the residuals could not be performed because of insufficient observations. (Annual data in current dollars are a prime candidate for autocorrelation.) A first order autoregressive model was estimated for alternative values of ρ_0 . The coefficient on nonagricultural basic earnings was found to be somewhat sensitive to the specification of the lagged error term; but, the alternative estimates were not statistically different from those shown in table A-3.

The coefficient of .80 for nonagricultural basic earnings suggests that derivative earnings will increase by \$0.80 for each \$1.00 increase in mining or railroad earnings. The relatively small number of observations

² Gross farm receipts for 1964 were estimated from U.S. Bureau of the Census, Census of Agriculture, 1964, Statistics for the State and Counties, *Montana and Wyoming* (U.S. Government Printing Office, Washington, D.C.), 1972, table 6. Montana Department of Agriculture and Statistical Reporting Service-U.S.D.A. *Montana Agricultural Statistics*, Vol. XII, p. 14.



Table A-3

Summary of Regression Analysis
Big Horn-Sheridan Impact Area

<u>Dependent Variable</u>	<u>Constant</u>	<u>Nonagricultural Basic Earnings</u>	<u>Gross Farm Receipts</u>	<u>\bar{R}^2^a</u>	<u>N</u>	<u>F(2,6)</u>
Derivative Earnings	3,352.4 (4,507.6) 0.7	.8014 (.3522) 2.275 ^b	.4910 (.1566) 3.135 ^b	.903	9	38.3 ^b

Note: Beneath each coefficient are its standard error and "t" ratio.

^a Corrected for degrees of freedom.

^b Significant at the .05 level.



and large standard error do not lend confidence to this estimate. But, It does "make sense" in light of other findings. Specifically, it is between the 1.45 estimated for seven southeastern Montana counties, which include Billings and Miles City, and the .31 estimated for three rural Montana counties--Big Horn, Rosebud, and Powder River counties.³ One would expect the propensity to spend locally for the Big Horn-Sheridan impact area to be greater than the three rural counties. The City of Sheridan is much larger than Hardin and Forsyth and no doubt attracts much of the retail business from southern Big Horn County. On the other hand, it offers nowhere near the diversity and depth of retail, wholesale, medical, and financial services offered by a city the size of Billings. Finally, there is evidence that the behavioral parameters underlying this specification, such as the propensity to spend locally, are relatively stable from one period to the next; nine years of data may be sufficient to establish valid estimates.⁴

The value of .80 was used to project the increase in derivative earnings due to changes in mining and railroad earnings. The new activity due to the Decker mine proposals will probably not, by themselves, be sufficient to increase the aggregate propensity to spend locally. No doubt some new businesses will be established. They will, however, probably be similar to those already existing in the area.

The increase in derivative earnings due to construction activity was projected to be one-half of the per dollar impact of permanent employees. In other words, \$1.00 of construction earnings will lead to \$0.40 of

³Paul E. Polzin, *Water Use and Coal Development in Eastern Montana*, p. A-6.

⁴Paul E. Polzin, "An Income Model for the State of Montana," pp. 14-16.



derivative earnings. This parallels the approach of other studies of the economic impact of coal development.⁵

Earnings per Worker

The underlying relationship between the basic and derivative sectors is in terms of aggregate spending patterns and dollars. Projections of earnings per worker in basic and derivative industries were used to convert the manpower requirements in the coal-related industries into export earnings and then reconvert the estimated increase in derivative earnings back into derivative employment. That is, the average earnings per worker in each of the coal-related industries was projected. This was used to estimate the total increase in basic earnings, which when multiplied by the values discussed earlier and combined with the projected decline in gross farm receipts yielded the projected increase in derivative earnings. Average and FTE derivative employment was derived by dividing total derivative earnings by average and FTE earnings per derivative worker.

The projected earnings in constant 1970 dollars for coal miners, railroad, and construction workers are shown in table A-4. The 1975 figures were derived from information provided by the Decker Coal Company, the Burlington Northern Railroad, and the Montana Employment Security Commission. These values differ slightly from those used in an earlier study because they are based, to some extent, on past data; while the earlier figures were derived before actual information was available.⁶

Projected earnings per worker in the basic industries were derived by applying projected national rates of change for each industry to the

⁵Paul E. Polzin, *Water Use and Coal Development in Eastern Montana*, p. 128.

⁶Paul E. Polzin, *Water Use and Coal Development in Eastern Montana*, p. A-9.



Table A-4

Annual Earnings per Worker in Coal-Related Industries, by Industry
 1975 and Projected 1976 to 2000
 Big Horn-Sheridan Impact Area

(In 1970 Dollars)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	Projected-----			
					<u>1979</u>	<u>1980</u>	<u>1985</u>	<u>2000</u>
Coal mining	\$13,500	\$13,810	\$14,128	\$14,453	\$14,785	\$15,126	\$16,986	\$23,939
Railroad	12,400	12,722	13,053	13,393	13,741	14,098	15,944	22,957
Construction	12,000	12,324	12,657	12,998	-- ^a	-- ^a	-- ^a	-- ^a

Sources: [1975] Burlington Northern Railroad, Decker Coal Company, and Montana Employment Security Commission, unpublished data. [Rates of Changes] U.S. Bureau of Economic Analysis, National Projections by Industry, Series E, unpublished data, 1973.

^aNo projected construction employment.



1975 values. Implicit in this procedure is the assumption that these workers will receive (real) wage increases at the same rates as their national counterparts. There is, however, no provision for increases in their productivity. It is assumed that productivity is constrained by the technology embodied in the capital and equipment at the time of installation and that it remains constant throughout the life of the mine.

The average and FTE earnings per derivative worker are presented in table A-5. The 1980 average earnings was derived from earlier projections for Montana. In light of the scale of projected development and the characteristics of the impact area, the earnings per derivative worker should lie between the projected values for the three- and seven-county areas in Montana. That is, the characteristics of the Sheridan-Big Horn area, taken as a whole, are less rural than the three-county area, but nowhere near as urban as the seven-county area, and the Decker mine proposals represent a significant, but not overwhelming impact on the local labor market. The rate of change between 1972 and 1980 is far greater than that which would have occurred in the absence of the Decker mine proposals; it represents the transformation of the endogenous labor market from one of excess supply to a situation of potential excess demand. The annual projections for 1976 to 1980 are only guesses; they reflect the fact that labor market pressures, and the largest increase in earnings, will probably be greatest between 1977 and 1980, when most of the new primary jobs are created.

After 1980, the change in average earnings per derivative worker approximates the rate projected by OBERS for this area.⁷ This implicitly

⁷ U.S. Water Resources Council, *1972 OBERS Projections*, Washington, D.C., 1972, Volume 2, pp. 194-196 and 304-305. U.S. Bureau of Economic Analysis, Regional Economic Information System, 1974, unpublished data.

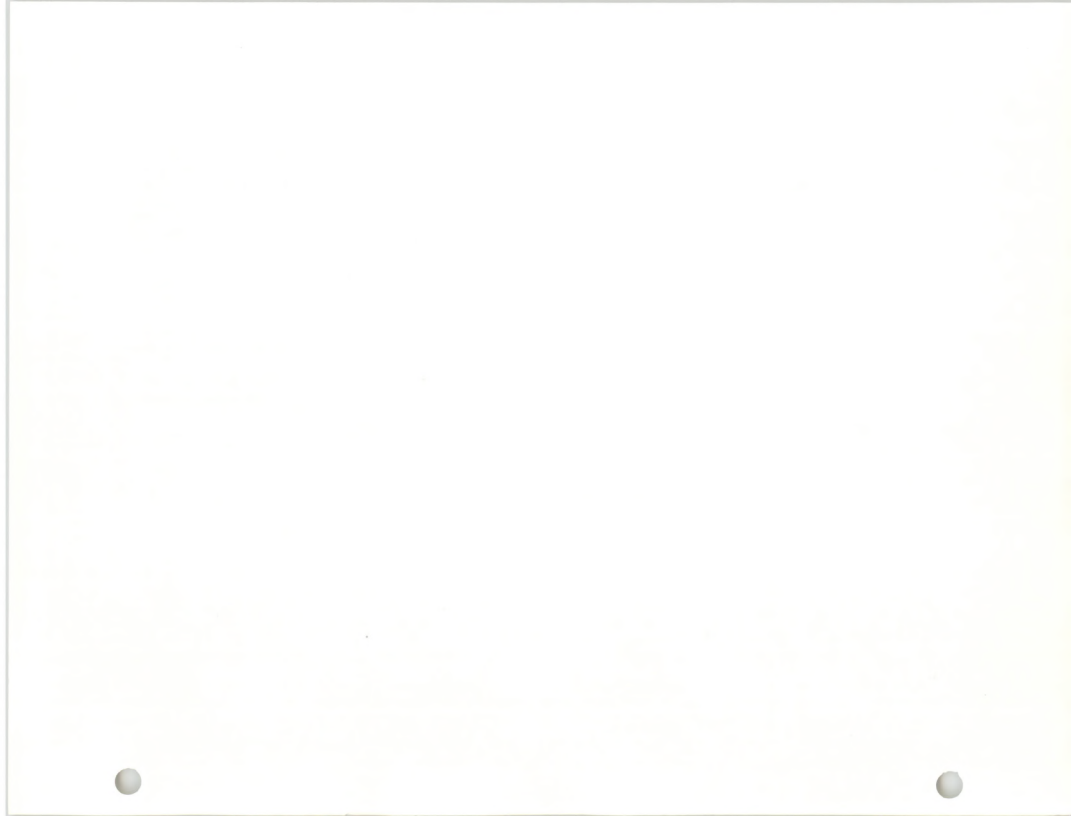


Table A-5

Average and FTE Earnings per Derivative Worker and Average Annual Hours of Work
1972 and Projected 1975 to 2000
Big Horn-Sheridan Impact Area

	<u>1972</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	Projected <u>1979</u>	<u>1980</u>	<u>1985</u>	<u>2000</u>
"Average" derivative worker (1970 dollars)	\$5,020	\$5,700	\$5,900	\$6,500	\$7,180	\$ 7,470	\$ 8,530	\$12,850
Average annual hours of work	1,478	1,456	1,450	1,444	1,439	1,433	1,396	1,312
FTE derivative worker (1970 dollars)	6,790	7,830	8,140	9,000	9,980	10,430	12,220	19,590

Sources: [1972 Earnings per worker] U.S. Bureau of Economic Analysis, Regional Economic Information System, Washington, D.C., unpublished data, 1974. [Annual hours] U.S. Bureau of the Census, *Census of Population: 1970*, Detailed Characteristics, Final Report, PC(1)-D28, Montana, and PC(1)-D52, Wyoming, Washington, D.C., 1972, table 185. Montana Department of Labor and Industry, *Montana Labor Market*, Supplement II. Ronald E. Kutscher, "Projections of GNP, Income, Output, and Employment," *Monthly Labor Review*, Volume 96, No. 12 (December 1973), p. 38.



assumes that no further coal development takes place. This may be unrealistic, but it is appropriate for the analysis of only the Decker mine proposals.

The annual hours of work was estimated for 1970. It was then projected into the future using national projections for individual derivative industries. The implicit assumption is that the increased labor market pressures in the Sheridan-Big Horn impact area do not alter the trend toward fewer annual hours in derivative industries.

Agriculture

The North Extension and East Decker mines will remove some agricultural land from production and reduce the gross farm receipts in the area. This, in turn, will reduce derivative earnings. According to the regression analysis presented in table A-3, derivative earnings in the impact area will decline by \$0.49 for each \$1.00 decrease in gross farm receipts.

The Decker Coal Company plans to fence and remove from agricultural production for the life of the projects approximately 3,158 acres for the North Extension Mine and about 3,170 acres for the East Decker Mine. At present, most of this land is used for grazing. There are, however, between 400 and 500 acres of flood irrigated hay land on the site of the North Extension Mine.

During 1973, gross farm marketings averaged about \$8.60 (1970 dollars) per acre for all agricultural land in Big Horn County.⁸ This figure

⁸ U.S. Bureau of the Census, Census of Agriculture, 1969, Volume 1. Area Reports, Part 38, *Montana*, Section 2. County data, U.S. Government Printing Office, Washington, D.C., 1972, p. 17. Montana Department of Agriculture and Statistical Reporting Service--U.S.D.A., *Montana Agricultural Statistics*, Volume XV, Helena, 1974, p. 13.



Includes cropland and other irrigated land and probably overstates the revenue per acre of the land to be affected by the Decker mines. Nevertheless, to allow for possible increases in the (real) price of agricultural products and potential declines in the productivity of adjacent acreage, it will be assumed that the land would have averaged \$15.00 (1970 dollars) per acre per year in gross farm receipts. Further, it is assumed that all 3,158 acres associated with the North Extension Mine are taken out of agricultural production during 1976 and 3,170 acres associated with the East Decker Mine are removed in 1978, when coal production is scheduled to begin. Thus, the North Extension Mine is projected to decrease gross farm receipts by \$47,370 (1970 dollars) per year. The corresponding figure for the East Decker Mine is projected to be \$47,550 (1970 dollars). In light of the statistical findings reported in table A-3, the decline in derivative earnings will not occur until the year following the decrease in gross farm receipts.

The decline in agricultural employment is uncertain and has not been projected. It depends, among other things, on whether entire ranch units are affected or production is simply transferred to a different area.



APPENDIX B

Coal-Related Development and the Montana Tax System

Four major taxes of the Montana tax system affect the operations of strip coal mines in Montana. Two of the taxes are based directly on the gross value of the coal, the Coal Mines License Tax and the Resource Indemnity Trust Tax. The Corporation License Tax is an income tax based on the net income of the corporate operation.¹ The fourth tax is the property tax which is levied against real and personal property; rights to enter land for digging, prospecting, or exploration, and the gross proceeds of coal mines.

In this Appendix we will look at each of these taxes in some detail, placing particular emphasis on the mechanisms in the tax system for transferring tax monies to locally impacted, coal development areas.

Coal Mines License Tax²

The Coal Mines License Tax is a severance tax on the gross value of coal mined in the state. The tax is levied against coal producers and the rates are based on the BTU rating (heat content) of the coal and the contract sales price. The current rate schedule is as follows:

¹ The incomes of individuals are also taxed by the Montana Individual Income Tax, but, since most coal producers are corporations, this tax is not discussed in this section. However, the increase in Individual Income Tax revenues resulting from the additional incomes of construction workers and coal miners working in Montana, are estimated in the impact section.

² Revised Codes of Montana (RCM) 1947, Title 84, Chapter 13.

Heating Quality (BTUs/lb of Coal)	Surface Coal Mines	Underground Coal Mines
Under 7,000	\$.12/ton, or 20% of value, whichever is higher	\$.05/ton, or 3% of value, whichever is higher
7,000-8,000	\$.22/ton, or 30% of value	\$.08/ton, or 4% of value
8,001-9,000	\$.34/ton, or 30% of value	\$.10/ton, or 4% of value
Over 9,000	\$.40/ton, or 30% of value	\$.12/ton, or 4% of value

Each mine operator must file a statement with the Montana Department of Revenue for each calendar quarter of operation indicating the tonnage produced, the contract sales price, the BTU rating of the coal, and a computation of the tax due. In computing the tax, the first 5,000 tons of coal produced each quarter are exempt. The quarterly report and amount of tax payment must be sent to the Department of Revenue within 30 days after the end of the quarter. A penalty for failure to file, or late payment, of 10 percent can be levied as well as interest of 1 percent per month.

"Contract sales price" is defined to mean either: (1) the price of the coal extracted and prepared for shipment, F.O.B. mine, excluding that amount charged by the seller to pay taxes paid on production; or (2) the price imputed by the Department of Revenue where the coal is not sold under an arms-length agreement.

"Taxes paid on production" is defined as any tax paid to federal, state, or local governments, upon the quantity of coal produced as a function of volume or value. Property and income taxes are specifically excluded from this category.

In cases where the coal producer also processes the coal or transfers the coal to a parent corporation, or other subsidiary, at less than an arms-length transaction, the Department of Revenue will impute a



price which approximates market values. The Department may request federal income tax and sales contract data from the producer.

The Montana Bureau of Mines and Geology is assigned the task of determining the BTU content of coal samples supplied by the producer. At least one sample per year is required by law although the Bureau may request additional samples.

The 1975 Montana Legislature made sweeping changes in both the method of computation and distribution of proceeds from this tax. Prior to July 1, 1975, this tax applied strictly to strip mines and the rates per ton were based on BTU content, ranging from \$.12 to \$.40 per ton. Three cents per ton of the tax were returned to the county where the mine was located and the remainder went into the state's general fund.

Effective July 1, 1975, the distribution of the Coal Mines License Tax is as follows:

\$.03/ton, or 4% of the tax revenue, whichever is higher	-- to the county from which the coal was mined for such purposes as the county government may determine. After December 31, 1979 the rate changes to \$.03/ton, or 3-1/2% of the tax.
27.5% of the tax revenue	-- to a local impact and education trust fund account. After July 1, 1979 the rate changes to 35% of the tax.
10% of the tax revenue	-- to a coal area highway improvement account until July 1, 1979.
10% of the tax revenue	-- to the earmarked revenue fund for state equalization aid to public schools of the state.
1% of the tax revenue	-- to a county land planning account until December 31, 1979.
2-1/2% of the tax revenue	-- to an alternative energy research development account. After December 31, 1979 the rate changes to 4%.



- | | |
|---------------------------|--|
| 2-1/2% of the tax revenue | -- to the sinking fund for renewable resource development bond account. |
| 2-1/2% of the tax revenue | -- for the acquisition of land for state parks, recreational areas, state monuments or state historical sites. After July 1, 1979, the rate is increased to 5% and the funds are limited to park acquisitions. |
| The remaining 40% | -- to the general fund. |

The tax revenue accumulated in the coal area highway improvement fund will be transferred to the Department of Highways to improve the roads in coal development areas other than primary and secondary highways already covered under federal construction programs.

The governor has appointed a seven-member coal board which will administer the local impact and education trust fund account. The board will make grants to local governments (counties, cities, and towns and school districts) and to state agencies to assist the local governments in providing adequate governmental services and facilities needed as a direct consequence of coal development. The Department of Community Affairs is assigned the task of designating counties, towns, and school districts which have at least 10 percent population increase during any three years since 1972, as a result of coal development. The coal board must then establish a priority for these areas and give 50 percent of all grants to these high growth areas.

By law, the coal board may only make grants up to 7/11 of the revenue paid into the local impact and education trust fund until June 30, 1979. After that date, up to 3/7 of the revenue to that account may be expended for grants. The investment income from the trust account is earmarked for the education equalization fund.

The revenue accumulated in the county land planning account will be distributed by the Department of Community Affairs to counties on the basis of the county's percentage of total land area of the state and the percentage of total population of the state.

Resource Indemnity Trust Tax³

The Resource Indemnity Trust Tax is a tax placed on the extraction of nonrenewable resources in the state to provide a trust fund account for repairing damage to the environment caused by resource extraction. The tax is levied against business entities extracting nonrenewable resources, including coal, and is based on the value of the product extracted. Each mine operator must file with the Department of Revenue a statement by March 31, indicating the gross yield and value of the minerals at the time of extraction during the previous calendar year. The annual tax to be paid at the time of filing is \$25 plus 0.5% of the gross value of the mineral extracted, if in excess of \$5,000.

All receipts from the Resource Indemnity Trust Tax will be invested by the State Board of Investments until the principal and interest in the trust account reaches \$10,000,000. At that point, the net earnings may be appropriated and expended until the account reaches \$100,000,000. Thereafter, the net earnings and receipts of the tax may be appropriated by the legislature and expended to "improve the total environment and rectify damage thereto."

This tax was enacted by the 1973 legislature and first applied to mineral production in calendar year 1973. The balance of the trust

³RCH, 1947, Title 84, Chapter 70.

account as of August 31, 1975 was \$3,291,879, so it will take several years to reach a balance of \$10,000,000 where subsequent net earnings of the account will be available for expenditure.

Corporation License Tax⁴

The Corporation License Tax is an income tax levied against corporations for the privilege of doing business in the state of Montana. Corporate net income is determined in a manner similar to that of the federal corporate income tax; allowable deductions for operating expenses and depreciation are subtracted from gross income to derive taxable income. Montana taxes only the income derived from business conducted in Montana and the statutes provide procedures for the segregation of income within and without the state.

The tax rate is 6.75 percent of the net income derived in Montana with a minimum of \$50. The tax return and payment must be filed by the 15th day of the fifth month after the close of the corporation's fiscal year.

Receipts from the Corporation License Tax are distributed to three state funds: 64 percent to the general fund, 25 percent to the education equalization fund, and 11 percent to the sinking fund for bond retirement (long range building program).

Property Taxes

Property taxes are levied by the state, counties, cities and towns, school districts, and special districts against the holders of real and personal property, rights to enter land for digging, prospecting, or exploration, and the gross proceeds of coal mines. The responsibility

⁴RCM, 1947, Title 84, Chapter 15.



for equitable assessment of all property in the state lies with the Department of Revenue. The county governments serve as the tax collector and agent for the other levels of government.

Real and personal property. The machinery, equipment, and real estate (land and buildings) of coal mines are included in this category and subject to property taxation. Real and personal property in the state is assessed at 40 percent of its full cash value. The assessed valuation is then reduced by the classification system in the Montana laws.⁵ Most nonagricultural real and personal property is included in Class 4 which is taxable at 30 percent of its assessed value. An exception would be pollution control equipment which is now classified in Class 7 and taxed at 7 percent of its assessed valuation.

Certain new industrial property may receive preferential tax treatment by being classified as Class 7 property for the first three years and taxed at 7 percent of assessed valuation rather than 30 percent under Class 4. To achieve this status the new industrial facility must apply to the Department of Revenue and meet the definition under the law:

New industry shall mean any person, corporation, firm partnership, association, or other group which establishes a new plant or plants in this state for the operation of a new industrial endeavor, as distinguished from a mere expansion, reorganization, or merger of an existing industry or industries. Provided, however, that the industrial property shall be limited to industries that manufacture, mill, mine, produce, process or fabricate material, or do similar work in which capital and labor are employed and in which materials unserviceable in their natural state are extracted, processed or made fit for use or are substantially altered or treated so as to create commercial products or materials; . . . and in no event shall the term new industrial property be included to mean property used by retail or wholesale merchants, commercial services of any type, agriculture, trades or professions. . . .⁶

⁵RCM, 1947, Sections 84-301 and 84-401.

⁶RCM, 1947, Section 84-301, Class 7(a).

The 1975 Legislature narrowed this definition further by excluding new industrial property which will create an adverse impact on existing, state, county, or municipal services. The Department of Revenue must develop regulations for the determination of what constitutes an adverse impact taking into consideration the number of people to be employed and the size of the community in which the location is contemplated. If the Department of Revenue must hold a hearing if it rejects an application for Class 7 status on these grounds. At that time, the local taxing authority may waive its objection to Class 7 status if the industry agrees to prepayment of taxes sufficient to satisfy tax requirements created by the location and construction of the facility.

The Department of Revenue has taken the position that firms who have previously operated coal mines in Montana cannot be subsequently classified as a new industrial facility by opening a new mine. This point is currently under litigation. The new requirement for determination of adverse effect has not been exercised as of yet.

Rights to Enter Land. The property tax is also levied against "rights to enter land for digging, prospecting, or exploration." Since these rights are intangible in nature and there are no legally prescribed means of measuring the value of such rights, the Department of Revenue has appraised the value on a per acre basis with average values by county ranging from \$0.20 to \$7.50 an acre. These rights are included in Class 1 and are taxable at their full assessed value.

Gross Proceeds. The 1975 Legislature excluded coal mines from the Net Proceeds Tax of Montana and passed legislation to include the gross proceeds of coal mines as property subject to property tax mill levies.⁷

⁷RCH, 1947, Sections 84-1320 to 84-1324.



Each person or firm engaged in coal mining must file a statement with the Department of Revenue by March 31st indicating the gross yield of coal and its value for the preceding calendar year. The "contract sales price" as defined for the Coal Mines License Tax in Section 84-1313 will be used as the valuation of the coal production for the year. By July 1 the Department of Revenue must transmit the valuation of the gross proceeds to the county assessor who enters the valuation on the tax roles of the jurisdiction where the mine is located. The gross proceeds of underground coal mines are classified in Class 3 and taxed at $33\frac{1}{3}$ percent of the assessed valuation. Gross proceeds of strip mines are included in Class 10 and taxed at 40 percent of the assessed valuation.

Property Tax Computation and Collection. The taxable values determined in the previous paragraphs are totaled and multiplied by the mill levy rate for each taxing jurisdiction in which the property is located. The county treasurer notifies the taxpayers of the amount due, collects the tax, and transfers the amounts levied by the state and lower governmental units.

Under certain circumstances the county commissioners of a county in which a major new facility is planned may require the prepayment of three times the estimated property tax due the year the facility is completed.⁸ A major new industrial facility is defined as a manufacturing or mining facility which will employ, on an average annual basis, at least 100 people in construction or operation of the facility and which will create a substantial adverse impact on existing state, county, or municipal services. Payment need not be all at one time, but only in

⁸RCM, 1947, Section 84-41-105.

the amounts needed from time to time by request of the county commissioners. Property will be taxed during the first three years and thereafter, except that $1/5$ of the amount prepaid will be allowed as a credit against property taxes in each of the first five years after the start of productive operation.

Aid to Impacted Communities

Two mechanisms in the state tax system are designed to help communities faced with rising government due to industrial development. First, the state education equalization fund is designed to channel funds from school districts with excess financing to districts with deficits. Secondly, the distribution of the funds collected by the Coal Mines License Tax has been modified to channel a portion of the tax receipts back to the communities and counties impacted by coal development. As mentioned in a previous section, 4 percent of the Coal Mines License Tax revenue will be returned to the county from which the coal was mined to be used for such purposes as the county government may determine. An additional $27\frac{1}{2}$ percent of the tax revenue will be channeled back to impacted areas in the form of grants to assist local governments in providing adequate levels of public services and education. Ten percent of the tax revenue will be used by the State Highway Department for the improvement of highways in coal development areas of the state. Also, recent changes in the state's tax laws allowing counties to require industrial firms to prepay property taxes in certain cases may help many counties over mine and plant construction periods where demands for public services increase rapidly but tax revenues lag far behind.

